DOCUMENT RESUME

ED 154 551 EC 110 254

AUTHOR	Vodola, Thomas M.
TITLE	A.C.T.I.V.E. Motor Ability and Physical Fitness Norms for Normal, Mentally Retarded, Learning Disabled, and Emotionally Disturbed Individuals.
INSTITUTION	Ocean Township Board of Education, Oakhurst, N.J.
SPONS AGENCY	Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
REPORT NO	72-341
PUB DATE	78
NOTE	187p.
AVAILABLE FROM	Township of Ocean School District, Dow Avenue, Oakhurst, New Jersey 07755
EDRS PRICE	MF-$0.83 Plus Postage. HC Not Available from EDRS.
DESCRIPTORS	Adapted Physical Education; Elementary Secondary Education; *Emotionally Disturbed; Evaluation Methods; *Learning Disabilities; Manuals; *Mentally Handicapped; *Motor Development; Norms; *Physical Development; Physical Education; Physical Fitness; *Student Evaluation
IDENTIFIERS	*Project ACTIVE

ABSTRACT

As part of the Project ACTIVE (All Children Totally InVolved Exercising) Teacher Training Model Kit, the manual is designed to provide ACTIVE adopters and potential adopters with: a realistic basis for assessing and evaluating the physical and motor proficiency of ambulatory individuals who are mentally retarded, learning disabled, or emotionally disturbed; a normative data base for assessing or evaluating the performance of normal children who manifest motor incoordination or low physical vitality; and step-by-step procedures for establishing school, district, or agency norms. Chapter I provides an introduction to the ACTIVE program. Chapter II includes a description of five motor ability and physical fitness instruments, the general population(s) for whom they are appropriate, the unique diagnostic-prescriptive aspects of each assessment tool, and sample test forms. Chapter III provides reliability and validity information relative to the instruments. Chapter IV gives detailed information regarding the motor ability and physical fitness norms prepared by the ACTIVE office. Chapters V and VI present norms that were established for local school districts in the State of New Jersey and throughout the United States. Chapter VII outlines a simplified procedure for developing school or district norms and explains the procedures for submitting data for conversion to percentiles. Numerous figures and tables are included. (SBH)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED154551

Township of Ocean School District
Dow Avenue
Oakhurst, New Jersey 07755

DEVELOPMENTAL AND ADAPTED PHYSICAL EDUCATION

A.C.T.I.V.E. MOTOR ABILITY AND PHYSICAL FITNESS NORMS:

FOR NORMAL, MENTALLY RETARDED, LEARNING DISABLED, AND EMOTIONALLY DISTURBED INDIVIDUALS

Thomas M. Vodola, Ed.D.
Project Director

Project ACTIVE: All Children Totally InVolved Exercising

Project Number: 72-341, Title IVC, E.S.E.A.

Copyright, Township of Ocean School District, Oakhurst, New Jersey, 1978

Copyright will be claimed only during the period of further development unless copyright of the final materials is authorized by the New Jersey State Department of Education.

"PERMISSION TO REPRODUCE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY
Thomas Vodola

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

EC110254

SCHOOL IMPROVEMENT IN NEW JERSEY

"On behalf of the Department of Education, State of New Jersey, I wish to bring Project ACTIVE to the attention of educators throughout the nation. The program has made a significant contribution to both physical and special education in New Jersey and thus will be of interest to both educators and parents."

Fred G. Burke

Dr. Fred G. Burke
Commissioner of Education
New Jersey Department of Education

TOWNSHIP OF OCEAN SCHOOL DISTRICT 1978

BOARD OF EDUCATION

Mr. James F. Jeffries, President
Ms. Constance Hughes, Vice President
Mr. Nicholas Donofrio, Jr.
Mr. James A. Filippo
Dr. Harry G. Kacandes
Mr. Stephen Morse
Dr. Joel Shappirio
Dr. Carney A. Vetrano
Mr. Steven H. Wohlert

SUPERINTENDENT AND STAFF

Mr. Robert J. Mahon
Superintendent of Schools

Mr. Marshall D. Conklin
Business Administrator

CENTRAL ADMINISTRATION

Mr. Charles Grippaldi
Mr. James Hartnett
Thomas M. Vodola, Ed.D.

D&A COUNCIL

Ms. Elizabeth Brown
Mr. Anthony Covino
Ms. Cecilia D'Agostin
Mrs. Ruth Dallam, R.N.
Mr. David Enderly
Mr. Jerry Hauselt
Mrs. Helen Liebhardt, R.N.
John Malta, D.D.
Mrs. Mary McSpadden
Mr. Glen W. Morgan
Mr. Thomas Pagano
Mr. Joseph Palaia
Enrique Pardon, M.D.F.A.C.S.
Mr. John Rasp
Mrs. Joanne Ridley, R.N.
Mr. Frank Rizzi
Mrs. Edith Schmidt, R.N.
Mrs. Carolyn Terhune
Mrs. Barbara Thompson
Mrs. Camille Tighe
Mr. John Turchyn
Mr. Donald Vineburg
Mr. Fred West
Mrs. Helen Young
Mrs. Wanda Young, R.N.
Thomas M. Vodola, Ed.D.

PARTICIPATING SCHOOL DISTRICTS AND AGENCIES

NEW JERSEY

COUNTY	SCHOOL
Atlantic	Egg Harbor
	J.S. Helmbold Educ. Ctr.
	Margate
	Mullica
Bergen	Dumont
	Region V, Spec. Services
Burlington	Mt. Laurel
	New Lisbon State
	Willingboro
Camden	Bellmawr
	Lindenwold
Cape May	County Board of Spec. Services
	Ocean City
Essex	Livingston
	Montclair State College*
	Nutley
	Orange
	South Orange-Maplewood
Gloucester	Gloucester County College
Hudson	Jersey City
	St. Joseph's School for the Blind
Hunterdon	Hampton
	Lebanon Township
	N. Hunterdon Central Regional
	Robert Hunter
Middlesex	Edison
	Harry S. Truman
	New Brunswick
	Old Bridge
Monmouth	Asbury Park
	Harbor School (Private)
	Long Branch
	Monmouth College*
	Red Bank
	Search Day*
	Spring Lake Heights
	Township of Ocean
	Wall Township
	West Long Branch
Morris	Dover
	Morris Hills
Ocean	Central Region H.S.
	Long Beach Island
Passaic	Eastern Christian Children's Retreat
	Wayne
Somerset	Branchburg (Midland School)
	Bridgewater-Raritan (Regional)
Sussex	McAffee Road
	NJ Neuro-Psychiatric Institute
	Sussex-Wantage Regional
Union	Kean College, Institute of Child Study*
	King's Daughter's Day Nursery
	Scotch Plains-Fanwood
	Union County Regional, High School No. 1

NATIONAL	STATE	SCHOOL/CITY
	Arkansas	Hope S.D., Hope
	Colorado	Adams Cty., Commerce City
		Hygiene/Erie/Leadville
	Illinois	Quincy School District*
	Iowa	Briggs/Cardinal
		Maquoketa
	Maine	Gardiner
		Gray School
	Massachusetts	Lakesboro
	Minnesota	Anoka-Hennepin, Coon Rapids
		Slayton*
	Mississippi	Univ. of Southern Miss., Hattiesburg
	Nebraska	Columbus
		Emerson-Hubbard
		Emerson
		Fairacres
		Lexington P.S., Lexington
	New York	Bronx Children's Psychiatric Center
	North Caroline	Greene County, Snow Hill
	Pennsylvania	Norristown
		Souderton Area S.D., Souderton
		Upper Merion
	Rhode Island	Dr. Jos. H. Ladd, No. Kingstown
		Oakland Beach
		Rhode Island College
		Warwick
	Tennessee	Mt. Pleasant
		S.E. Tennessee Educational Corp., Cleveland
	Texas	Cluster 4 Pupil Appraisal Ctr.,* San Antonio
		Texas Woman's Univ., Denton*

*ACTIVE Satellite Sites — visitation for awareness and training sessions are encouraged.

DEDICATION

ACTIVE strives to meet the needs of the handicapped population by providing a variety of services and products to the practitioners in the field. These efforts would be impossible if the Developer-Demonstration Site did not have efficient and enthusiastic personnel.

This manual is dedicated to that "team"—the ACTIVE clerical staff. They have devoted countless hours to the task of preparing the norms, tables and graphs highlighted throughout this manual. To date their accomplishments include:

- Providing individualized time prescriptions for 10,000 individuals
- Analyzing the pre-post scores for 3,000 individuals
- Establishing norms for four states and ten school districts
- Preparing the following product materials for publication and/or dissemination:
  - —11 manuals (prior to this one)
  - —ACTIVE Newsletter—40 issues
  - —2 filmstrips
  - —12 awareness brochures and flyers
  - —500,000 pages of supplementary instructional materials
- Processing and expediting the sale of 9,182 manuals and filmstrips

ACTIVE Clerical Staff

Jean Harmer—Coordinator of Clerical Services
Dorothy Smith—Preparation of All Product Materials
Margaret Campbell—Sales and Dissemination of Product Materials
Rosemary "Babe" Napolitano—Data Processor and Mimeographer of Supplementary Materials
Theresa Addeo—Assistant Data Processor
Vickie Fields—Synthesis of Local, State and National norms
Jeanette Gidaro—Synthesis of Local, State and National norms

FOREWORD

Project ACTIVE was initiated in 1974 because a need existed; a need to help children with handicapping conditions who were not being helped.

The program was launched against great odds and much criticism. It has since developed into one of the most successful developmental and adapted physical education programs in the nation.

This was accomplished because the program is inherently good and was implemented by a competent and dedicated group of educators. Mostly though, its success has been due to the dynamic leadership of Dr. Vodola.

Important aspects of leadership are:

1. the willingness to take risks; not wild ones but calculated risks when necessary to successfully accomplish an objective.
2. the willingness to accept responsibility for any decisions made.

Dr. Vodola has always demonstrated these two aspects of leadership and never more than now.

A need existed and he has stepped forward "where angels fear to tread." Some may criticize. They may say the population used is limited. This is acknowledged and the norms should not be considered valid for other populations. However, I would be surprised if there is a significant difference between the scores of the children from New Jersey and those of Oregon.

The greatest furor will no doubt arise from the use of mental age in the norms. There is a paucity of research in this area. Initial data seem to indicate a relationship between mental age and Project ACTIVE test items. Further research may show this to be negative. If so, mental age will be replaced by something more valid.

However, the need exists *now* and I must commend Dr. Vodola for stepping forward to fill a void while others talk and await final proof.

David S. Bilowit
Professor, Special Education
Kean College, Union, N.J.

PREFACE

The development of the Project ACTIVE manual, *Motor Ability and Physical Fitness Norms for Normal, Mentally Retarded, Learning Disabled, and Emotionally Disturbed Individuals* was a cooperative effort of the Township of Ocean School District and the Project Center, Division of School Programs, Department of Education, State of New Jersey.

In 1974 the Project ACTIVE manual, *Developmental Physical Education Low Motor Ability* was validated by the standards and guidelines of the United States Office of Education as successful, cost-effective, and exportable. As a result the program is now funded through the New Jersey Elementary and Secondary Education Act, Title IVC program to offer interested educators the training and materials required for its replication. This manual was prepared as part of the program's dissemination effort.

The purpose of Title IVC is to encourage the development and dissemination of innovative programs which offer imaginative solutions to educational problems. Project ACTIVE has achieved this purpose by disseminating its innovative program to 1500 teachers and paraprofessionals through 75 regional workshops. Further, as of June 1976, 76 school districts and agencies in the State of New Jersey have adopted or adapted some aspect of the individualized physical education program in accordance with the educational needs of their districts—involving more than 20,000 individuals.

This manual has been prepared as one of the components of the Project ACTIVE Teacher Training Model Kit. Other component parts of the Model Kit which are available to those interested in adopting or adapting the project's individualized instructional concept are cited below.

· Developmental Physical Education[1]	Low Motor Ability
· Developmental Physical Education:	Low Physical Vitality
· Adapted Physical Education:[2]	Postural Abnormalities
· Adapted Physical Education:	Nutritional Deficiencies
· Adapted Physical Education:	Communications Disorders
· Adapted Physical Education:	Motor Disabilities or Limitations
· Adapted Physical Education:	Breathing Problems
· Developmental and Adapted Physical Education:	A Competency-Based Teacher Training Manual
· Teacher Training Filmstrip:	A Competency-Based Approach
· Motor Ability Filmstrip:	An Individualized-Personalized Approach
· Administrator's Guide:	Organizational and Administrative Strategies
· Teacher Resource Manual:	State and National Sources and Services
· Research Monograph:	Competency-Based Teacher Training and Individualized-Personalized Physical Activity

[1] Developmental Physical Education is defined as that aspect of the physical education program which addresses itself to the provision of enrichment activities for those students who are below normal in terms of physical fitness, motor performance, and/or perceptual-motor performance.

[2] Adapted Physical Education is defined as that aspect of the physical education program which addresses itself to the provision of enrichment of physical activities for those students who manifest medically-oriented problems.

These products have been validated for national dissemination and may be purchased from the project director.

Districts interested in establishing individualized physical education programs for the handicapped need assistance. The following dissemination-diffusion services are provided to aid implementing schools during the initial phases of program installation:

- Inservice training programs
- On site monitoring
- Certificates of merit for pupil achievement and/or improvement
- Monthly issue of the ACTIVE *Newsletter*
- Test instruments to assess pupil performance
- Individualized pupil time prescriptions
- Pre-post data analyses
- Prescriptive guidelines
- Article publicizing program in *Newsletter*
- Norms establishment
- Research assistance
- Other consultant services

For additional information regarding the model kit, other awareness materials, or available services, the reader is requested to contact:

Dr. Thomas M. Vodola, Director
Project ACTIVE
Township of Ocean School District
Dow Avenue
Oakhurst, New Jersey 07755

ACKNOWLEDGEMENTS

The manual, *A.C.T.I.V.E. Motor Ability and Physical Fitness Norms for Normal, Mentally Retarded, Learning Disabled, and Emotionally Disturbed Individuals* is based on the Developmental and Adapted (D&A) Physical Education Program developed by the Project Director in the Township of Ocean School District, Oakhurst, N.J.

Special appreciation is accorded to the Township of Ocean Board of Education, the Superintendent of Schools, administrators, teachers, students, and parents for their total commitment to the program. The D&A Council and members of the physical education staff have been the major catalysts for the ACTIVE Program and deserve a large measure of the credit for whatever success has been attained.

To Prentice-Hall, Inc., a special note of thanks for granting the Project Director permission to include materials from his text, *Individualized Physical Education Program for the Handicapped Child.*

The norms included in this text are based on pupil data submitted by teachers and administrators throughout the United States. Without their cooperation, efforts and permission, Project ACTIVE could not have provided this compendium of norms. To the schools, districts and agencies they represent, our heartfelt thanks.

Grateful appreciation is expressed to the New Jersey State Department of Education and the Title IVC staff members for their continued assistance and support. To Dr. Lillian White-Stevens, a deep debt of gratitude for her editing expertise.

A final note: Although the aforementioned individuals made many constructive suggestions which were included in the manual, I accept full responsibility for the final product and any criticisms thereof, because all final decisions were a reflection of my personal philosophy.

Thomas M. Vodola, Ed.D.
Title IVC, Project Director

TABLE OF CONTENTS

DEDICATION		iv
FOREWORD		v
PREFACE		vi
ACKNOWLEDGEMENTS		viii
CHAPTER		
I	INTRODUCTION	1
	Overview of the ACTIVE Program	1
	Purposes of the Publication	1
	Description and rationale for using the instruments	1
	Administration of motor and physical fitness instruments	1
	Analyses of norms based on chronological and mental ages	1
	A compendium of local, state and national norms	2
	Guidelines for establishing local norms	2
II	MOTOR ABILITY AND PHYSICAL FITNESS INSTRUMENTS: INTENT AND DESCRIPTION	3
	Instrumentation Design	3
	Discriminatory power	3
	Component identification	3
	Description of Motor Ability Instruments	4
	Motor ability test: level II	4
	Motor ability test: level III	9
	Motor ability test: level I	13
	Additional remarks	20
	Description of Physical Fitness Test Instrument	20
	Township of Ocean physical fitness test: level II	20
	Township of Ocean physical fitness test: level I	22
	Additional remarks	26
III	ADMINISTRATION OF MOTOR ABILITY AND PHYSICAL FITNESS TEST INSTRUMENTS	27
	ACTIVE's Reliability and Validity Studies	27
	Presentation of statistical information	27
	Analysis	27
	General Guidelines for Test Administration	27
	Motor ability testing	30
	Physical fitness testing	30
	Some Important Considerations	30
IV	ANALYSES OF NORMS BASED ON CHRONOLOGICAL AND MENTAL AGES: SOME OBSERVATIONS AND RECOMMENDATIONS	33
	Cause of Concern	33
	A Review of the Literature	33
	Some Observations	34
	Analyses of Developmental Curves	34
	Motor ability performance, level II males	36
	Motor ability performance, level II females	36
	Motor ability performance, level III males	36

Motor ability performance, level III females 36
Physical fitness proficiency, level II males 36
Physical fitness proficiency, level II females 36
Analyses of Comparative Data 36
Comparison of normal and mentally retarded students 37
motor ability instrument, level II 37
motor ability instrument, level III 37
physical fitness instrument, level II 37
Comparison of normal and learning disabled students 37
motor ability instrument, level II 37
motor ability instrument, level III 59
physical fitness instrument, level II 59
Comparison of normal and emotionally disturbed students 59
motor ability instrument, level II 59
motor ability instrument, level III 59
physical fitness instrument, level II 59
Summary, Findings and Recommendations 59
Summary 59
Findings 60
Recommendations 60

V LOCAL, STATE AND NATIONAL NORMS BASED ON CHRONOLOGICAL AGE 62
Section I: Motor Ability Norms: Chronological Age 62
Local norms, level II 62
Nebraska, Lexington, Lexington Public Schools 62
New Jersey, Asbury Park, Asbury Park School District 63
New Jersey, East Windsor, Perry Drew School 63
New Jersey, Rutherford, Rutherford School District 65
New Jersey, Oakhurst, Township of Ocean School District 67
Local norms, Level III 67
New Jersey, Oakhurst, Township of Ocean School District 67
State norms, New Jersey, level II 69
State norms, New Jersey, level III 72
State norms, Rhode Island, level II 74
National norms, United States, level II 75
National norms, United States, level III 77
Section II: Physical Fitness Norms: Chronological Age 80
Local norms, level II 80
Illinois, Quincy, Quincy School District 80
Minnesota, Slayton, Slayton Public Schools 83
New Jersey, Oakhurst, Township of Ocean School District 88
New Jersey, Rutherford, Rutherford School District 94
State norms, New Jersey, level II 98
National norms, United States, level II 105
Summary Remarks 110
Limitations 110
Recommendations 110

VI LOCAL AND STATE NORMS BASED ON MENTAL AGE 111
Section I 112
Motor ability norms, mentally retarded, level II 112
Motor ability norms, mentally retarded, level III 117
Physical fitness norms, mentally retarded, level II 121
Section II 127

Motor ability norms, learning disabled, level II 127
Motor ability norms, learning disabled, level III 132
Physical fitness norms, learning disabled, level II 135
Section III 139
Motor ability norms, emotionally disturbed, level II 139
Motor ability norms, emotionally disturbed, level III 142
Physical fitness norms, emotionally disturbed, level II 145
Summary Remarks 148
Limitations 148
Recommendations 148

VII DEVELOPMENT OF LOCAL NORMS 148
Rationale 149
Procedure 149
Administer the test or test battery 149
Prepare form and record test scores 149
Transfer test scores to tally sheets 150
Compute percentile scores 150
Convert data to normalized standard scores 150
Summary Remarks 152
APPENDICES 153
BIBLIOGRAPHY 163
INDEX 164

TABLES

2–1 Motor Ability Test Form: Level II 10
2–2 Motor Ability Test Form: Level III 10
2–3 Motor Ability Test Form: Level I 18
2–4 Physical Fitness Test Form Level II 23
2–5 Physical Fitness Test Form: Level I 25
3–1 Reliability and Validity of Motor Instruments 28
3–2 Reliability and Validity of Physical Fitness Instruments 29
3–3 Research Study Data Recording Form 31
4–1 Correlational Matrix: Motor Performance, Chronological Age and Mental Age 35
4–2 Intercorrelations: Motor Ability, Physical Fitness, Mental Age and Chronological Age 35
7–1 Raw Score Tally Sheet: A Sample 151
7–2 Determining the Percentage of Cases Sought 152

FIGURES

4– 1 Motor Ability Instrument Level II: Male Developmental Curves Based on Chronological Age, Mental Age and Handicapping Condition 38-39
4– 2 Motor Ability Instrument Level II: Female Developmental Curves Based on Chronological Age, Mental Age and Handicapping Condition 40-41
4– 3 Motor Ability Instrument Level III: Male Developmental Curves Based on Chronological Age, Mental Age and Handicapping Condition 42-43
4– 4 Motor Ability Instrument Level III: Female Developmental Curves Based on Chronological Age, Mental Age and Handicapping Condition 44-45
4– 5 Physical Fitness Instrument Level II: Male Developmental Curves Based on Chronological Age, Mental Age and Handicapping Condition 46-47
4– 6 Physical Fitness Instrument Level II: Female Developmental Curves Based on Chronological Age, Mental Age and Handicapping Condition 48-49

4– 7	Comparison of Normal and Mentally Retarded Males and Females on Motor Ability Level II Factors	50
4– 8	Comparison of Normal and Mentally Retarded Males and Females on Motor Ability Level III Factors	51
4– 9	Comparison of Normal and Mentally Retarded Males and Females on Physical Fitness Level II Factors	52
4–10	Comparison of Normal and Learning Disabled Males and Females on Motor Ability Level II Factors	53
4–11	Comparison of Normal and Learning Disabled Males and Females on Motor Ability Level III Factors	54
4–12	Comparison of Normal and Learning Disabled Males and Females on Physical Fitness Level II Factors	55
4–13	Comparison of Normal and Emotionally Disturbed Males and Females on Motor Ability Level II Factors	56
4–14	Comparison of Normal and Emotionally Disturbed Males and Females on Motor Ability Level III Factors	57
4–15	Comparison of Normal and Emotionally Disturbed Males and Females on Physical Fitness Level II Factors	58

CHAPTER I

INTRODUCTION

Overview of the ACTIVE Program

Project ACTIVE (All Children Totally InVolved Exercising) has been developed to serve two purposes:

1. Provide a model for training physical educators, special educators, recreation teachers and paraprofessionals so that they can achieve the minimal competencies necessary to implement an individualized physical education program for handicapped individuals.
2. Provide practitioners in the field with a structured procedure for individualizing and personalizing (IP) a physical activity program for individuals who exhibit any of the following handicapping conditions: mental retardation, learning disabilities, nutritional deficiencies, postural abnormalities, breathing problems, motor disabilities or limitations, and communication disordersrs.[1] The IP process is also used with the normal population.

ACTIVE perceives the role of the teacher as one who *diagnoses, assesses, prescribes,* and *evaluates* the performance of the learner. Thus, the "model" and practicum experiences constantly stress the use of formal and informal test instruments to gather data essential for *diagnosis.* Further, emphasis is focused on testing at periodic intervals in order to ascertain pupil gains and to modify prescriptive programs accordingly.

A major problem encountered by the ACTIVE Program since its inception has been the virtual unavailability of normative data for diagnosing and evaluating the progress of handicapped individuals. Similar concerns have been expressed by teachers of the handicapped (i.e., the limited normative data available to them and their inability to establish their own norms are due to the small population of handicapped students within their schools or agencies). The publication of ACTIVE *Motor Ability and Physical Fitness Norms for Normal, Mentally Retarded, Learning Disabled, and Emotionally Disturbed Individuals* is designed to resolve the problem to some degree.

Purposes of the Publication

The manual has been prepared to provide ACTIVE adopters and potential adopters with:

1. A realistic basis for assessing and evaluating the physical and motor proficiency of ambulatory individuals who are mentally retarded, learning disabled, or emotionally disturbed.
2. A normative data base for assessing or evaluating the performance of normal children who manifest motor incoordination or low physical vitality.
3. Step-by-step procedures for establishing their own school, district, or agency norms.

The procedure for achieving the objectives are detailed in the following sub-sections.

Description and rationale for using the instruments. Chapter II includes a description of five motor ability and physical fitness instruments; the general population(s) for whom they are appropriate; the unique diagnostic-prescriptive aspects of each assessment tool; and sample test forms. "Additional Remarks" provide some diagnostic guidelines.

Administration of motor and physical fitness instruments. Chapter III provides reliability and validity information relative to the instruments. Its major thrust is the provision of administrative guidelines for the use of the instruments in a field-setting.

Analyses of norms based on chronological and mental ages. Many school districts and agencies in New Jersey and other states adopted the Project's motor ability and physical fitness instruments for assessing the performance of their students, both the handicapped and the non-handicapped. Upon adoption, these districts were confronted with the problem of the lack of local norms. The options available for assessment of pupil performance were (1) to use existing Township of Ocean School District norms, or (2) to use pre- and post-test raw data for comparative purposes.

While the latter technique has merit and was used by some districts, most teachers and administrators desired

[1] Personalized instruction deals with the humanistic aspects of the teaching-learning process. Primary consideration is devoted to the development of teacher-pupil and pupil-pupil rapport and the enhancement of the child's self-concept.

to assess pupil performance on the basis of norms tables. Chapter IV provides detailed information regarding the motor ability and physical fitness norms prepared by the ACTIVE Office, including:

1. The dilemma created by assessing the performance of the handicapped on the basis of chronological age.
2. Developmental norms for the normal population (chronological age) and the handicapped population (chronological and mental ages).
3. A comparison of norms for the handicapped population (based on chronological and mental ages) with the norms of the normal population.
4. Discussion and recommendations.

A compendium of local, state and national norms. Since its inception, the ACTIVE Program's developer staff has requested motor ability and physical fitness data from schools, districts and agencies who have adopted the program. In return, Project ACTIVE agreed to establish and make available all normative data.

Chapters V and VI fulfill that commitment by presenting norms that were established for local school districts in the State of New Jersey and throughout the United States. A major contribution is the establishment of norms established for the mentally retarded, learning disabled and emotionally disturbed based on mental ages.

Guidelines for establishing local norms. Ideally, individual progress is best determined by comparing a child's pre-post test scores. However, students often desire to know how their performance scores compare with those of their peer group. Further, parents also like some sort of a reporting system which is based on the ranking of scores, despite the fact that the ranking does not reflect the achievement of their own children.

Although local, state, and national norms are provided in this manual, it is recommended that, where possible, adopter districts develop norms based on their population, since the state or national norms are based on demographic data which is not necessarily applicable to a local situation. Chapter VII provides a simplified procedure for developing school or district norms and explains the procedure for submitting data for conversion to percentiles.

Districts desiring to develop their own norms, who need assistance will be aided by the ACTIVE Office.

Monmouth College Training Program, West Long Branch, N.J.

CHAPTER II

MOTOR ABILITY AND PHYSICAL FITNESS INSTRUMENTS: INTENT AND DESCRIPTION

ACTIVE views the development of each child's motor and physical proficiencies as two of the most important goals of physical education. Since, the diagnostic-prescriptive approach mandates the development of instruments to aid the process, a major effort was directed toward the development of such appropriate instruments. This chapter presents the intent and descriptions of these instruments.

Instrumentation Design

The diagnostic-prescriptive nature of the ACTIVE Program necessitated the selection of instruments which were compatible with the assessment process. The instruments had to provide information about the learner as well as reflect scores that indicated achievement levels. Two important criteria that the ACTIVE test batteries had to meet related to "discriminatory power" and "component identification."

Discriminatory power. Discriminatory power is the capability of a test item to differentiate among pupil ability levels. Theoretically, a good diagnostic test item enables the poorest performer to achieve a score and yet ensures that the most talented student does not achieve the top score. As a case in point, the standard pull-up test is a poor diagnostic tool because a large percentage of the students who take the test cannot complete one pull-up; furthermore, it does not provide any information relative to the arm strength of those students who could not execute one pull-up.

All the test items presented in this chapter were carefully reviewed and/or modified to ensure maximum discrimination. In those instances where maximum discriminatory power was not provided, other test batteries were designed to provide test items for those students with extreme scores. For example, three motor ability instruments are provided to aid in the assessment of varying levels of achievement (e.g., severely or profoundly retarded, trainable mentally retarded, educable mentally retarded, or normal). Examples of item modifications are:

- Beam-walking on a four-by-four: the length of the beam was tapered culminating with three feet of infinity; and "marked off" in inches.
- Cable jump, five attempts forward: this was modified to include five attempts forward and five attempts backward.[1]
- Static arm hang, standard grip: a successful attempt is terminated when the individual's arms are "locked" in a fully extended position.
- Conventional sit-ups: this was modified to "curled" sit-ups, with the palms resting on the thights.

Component identification. The DP process assumes a test instrument is administered for a learner-related purpose. Therefore, the teacher should be thoroughly conversant with a battery's test items and be able to identify the components measured. For example, Hilsendager and colleagues, developers of the original motor ability instrument modified by ACTIVE, hypothesized that the test battery items provided information relating to the following components or factors: gross body coordination; balance-postural orientation; eye-hand coordination; eye-hand accuracy; and eye-foot accuracy.[2] The components were validated by expert judgement, (pediatricians, motor specialists, and early childhood educators). They reviewed the items and stated the test items and components were valid indicators of motor ability. Similarly, Vodola identified the factors that are measured by administration of the Township of Ocean Physical Fitness Test: arm and shoulder strength; abdominal strength; explosive power of the legs; and cardiorespiratory endurance.[3]

The identification of test battery factors is important because it provides a means of comparing a child's relative

---

[1] Designed by Edwin A. Fleishman, *The Structure and Measurement of Physical Fitness*, 1964, pp. 169-170.

[2] Donald Hilsendager, Harold K. Jack, and Lester Mann, *Basic Motor Fitness Test for Emotionally Disturbed and Mentally Handicapped Child* ... Preliminary Report, 1968.

[3] Thomas M. Vodola, "Physical Fitness Test Battery," Township of Ocean School District Oakhurst, New Jersey, 1971.

strengths and weaknesses so that guidelines for prescriptive activities can be developed. The prescriptive procedure involves converting factor scores to normalized standard scores and developing pupil time prescriptions in accordance with need.[1]

Description of Motor Ability Instruments

Reactions of trainees and adopter districts during the past four years resulted in the development of three separate, but related instruments. It became apparent that no one test battery could be used to assess the performance of a handicapped population which exhibited such diverse problems. A rationale for each battery and a description thereof are presented on the following pages.

Motor ability test: level II.[2] Originally, the instrument was intended to assess the performance of all mentally retarded (MR) learning disabled (LD), emotionally disturbed (ED), or normal children K-2. However, it soon became apparent that the instrument could not be used with extreme groups (severely or profoundly retarded, or gifted). It did prove satisfactory with the mildly retarded, learning disabled, emotionally disturbed, motorically handicapped, or normal children in grades K-1.

The Motor Ability Test presented is a modification of the Temple University-Buttonwood Farms **Motor Fitness Test for Emotionally Disturbed Children.**[3]

Motor Ability Test: Level II

The tester should observe student performance carefully and record ancecdotal remarks for all failures so that an individualized program can be prescribed.

Fig. 2-1 Walk

GROSS BODY COORDINATION

Test Item No. 1: *Walk*
Factor: Gross Body Coordination
Subject must walk at least fifteen feet in a smooth manner. Bilateral coordination of opposite arm and leg is required, i.e., left arm-right foot and right arm-left foot, plus subjective evaluation of gross body coordination.
Attempts: 2 Scoring: Maximum—2 points

Test Item No. 2: *Creep*
Factor: Gross Body Coordination
Bilateral coordination of opposite hand and knee is required, i.e., left hand-right knee must come forward at the same time and right hand-left knee must come forward at the same time. Subject must creep (hands and knees) at least ten feet (5 x 10 mat) to pass.
Attempts: 2 Scoring: Maximum—2 points

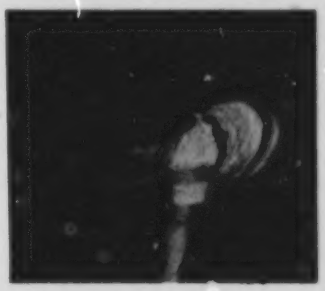


Fig. 2-2 Creep

Test Item No. 3: *Climb Stairs*
Factor: Gross Body Coordination
Subject must climb at least four consecutive steps (twelve inches high) by using alternate footwork. Both feet must not come together on a step, but rather one foot on one step and the next step with the other foot; no support may be given. (Corridor stairs may be used.)
Attempts: 2 Scoring: Maximum—2 points

---

[1] Refer to the ACTIVE Manual, *Low Motor Ability: An Individualized Program*, for a detailed explanation of the conversion of raw scores to stanines and time prescriptions.

[2] The writer has been ensnarled in the "labels trap." This test battery has been synonomously referred to as *Motor Ability Test, Ages 5-7* or *Motor Ability Test, Grades K-2*. However, neither label conveyed the "true" student population that the battery is designed for. When the two additional batteries were developed, they were referred to as *Motor Ability Test, Ages 8-11* or *Motor Ability Test, Grades 3-6* and *Basic Motor Ability Screening Test*. The new instruments created additional problems; for example, Teachers were using the second battery only with children ages 8-11, or in grades 3-6. The instruments were intended to provide teachers with three increasingly demanding diagnostic tools so that they could match the tool with the ability level of the child—grade and handicapping condition are not the primary determinants. Hereafter, the old labels are changed, and referred to as:

OLD LABEL	NEW LABEL
Basic Motor Ability Screening Test	Motor Ability Test: Level I
Motor Ability Test, Ages 5-7, or K-2	Motor Ability Test: Level II
Motor Ability Test, Ages 8-11, or Grades 3-6	Motor Ability Test: Level III

[3] Hilsendeger, *op. cit*, pp. 7-11.

Fig. 2-3 Climb/Descend Stairs

Test Item No. 4: *Skip*
Factor: Gross Body Coordination
Subject must skip at least ten feet in a smooth manner (without extra hops). One practice attempt shall be permitted.
Attempts: 2 Scoring: Maximum—2 points

Fig. 2-4 Skip

Test Item No. 5: *March-in-place*
Factor: Gross Body Coordination
To pass, the subject must keep in cadence with the tester who claps cadence of one clap per second (15 seconds) for the first attempt and two claps per second (15 seconds) for the second attempt.
Attempts: 2 Scoring: Maximum—2 points

Subject's score on gross body coordination is the number of successful accomplishments in ten attempts. All of the

Fig. 2-5 March-In-Place

gross body coordination skills should evidence total body coordination for a passing attempt.
Maximum total points—Gross Body Coordination—10 points

BALANCE/POSTURAL ORIENTATION

Test Item No. 1: *Stand-both Feet*
Factor: Balance-Postural Orientation
Subject must stand with feet together, arms extended forward from shoulders at a 90 degree angle and eyes closed for fifteen seconds. An unsuccessful attempt is recorded if the subject shifts his feet, or moves arms 15 degrees from the 90 degree position.
Attempts: 3 Scoring: Maximum—3 points

Fig. 2-6 Stand-Both Feet

Test Item No. 2: *Stand-right Foot*
Factor: Balance-Postural Orientation
Subject must stand on right foot with left foot off the floor and not touch any stable object for fifteen seconds (eyes open). Unsuccessful attempt if subject shifts right foot or touches left foot to right leg, foot, floor, or any other supporting structure before the elapse of fifteen seconds.
Attempts: 3 Scoring: Maximum—3 points

Fig. 2-7 Stand-Right Foot

Test Item No. 3: *Stand-left Foot*
Factor: Balance-Postural Orientation
Same directions as for test item No. 2 except feet are reversed.
Attempts: 3 Scoring: Maximum—3 points

Fig. 2-8 Stand-Left Foot

Test Item No. 4: *Jump—Feet Staggered*
Factor: Balance-Postural Orientation
Subject must jump off eighteen-inch high step or bench with one foot in front of the other. No support is allowed and balance must be maintained on landing (no shift of feet). The tester should have the subject jump and land in an area immediately adjacent to the bench.
Attempts: 3 Scoring: Maximum—3 points

Fig. 2-9 Jump—Feet Staggered

Test Item No. 5: *Jump—Feet Parallel*
Factor: Balance-Postural Orientation
Same procedure as test item No. 4 except feet are side by side.
Attempts: 3 Scoring: Maximum—3 points

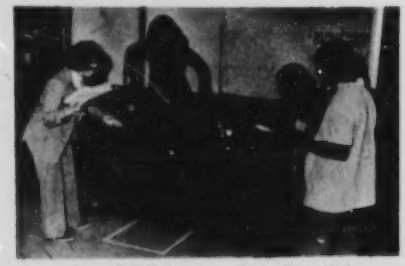


Fig. 2-10 Jump—Feet Parallel

Test Item No. 6: *Stationary Jump Both Feet*
Factor: Balance-Postural Orientation
Subject must jump on both feet for at least three jumps without stopping, losing balance, using a support, or stepping on, or out of an 18" square.
Attempts: 3 Scoring: Maximum—3 points

Fig. 2-11 Stationary Jump Both Feet

Test Item No. 7: *Stationary Hop Left Foot*
Factor: Balance-Postural Orientation
Subject must hop on left foot for at least three hops without stopping, losing balance, using a support, or stepping on, or out of an 18" square.
Attempts: 3 Scoring: Maximum—3 points

Fig. 2-12 Stationary Hop —Left Foot

Test Item No. 8: *Stationary Hop Right Foot*
Factor: Balance-Postural Orientation
Same procedure as test item No. 7 except the subject hops on right foot.
Attempts: 3 Scoring: Maximum—3 points

Subject's composite score on Balance-Postural Orientation is the number of successful accomplishments in twenty-four attempts.
Maximum total points—Balance-Postural Orientation—24 points

Fig. 2-13 Stationary Hop —Right Foot

EYE AND HAND COORDINATION

Test Item No. 1: *Catch*
Factor: Eye and Hand Coordination
To pass, the subject must catch a whiffleball (the circumference of a softball) using only his hands. Juggling the ball, having it strike any part of the body, other than the hands, or dropping the ball, constitutes a failure. The toss must be from a distance of eight feet and thrown in a soft,

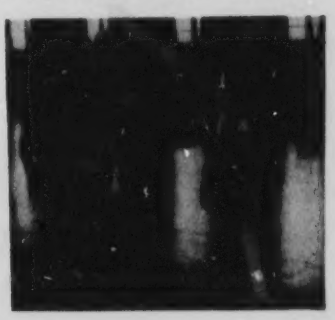


Fig. 2-14 Catch

underhand manner. The trajectory should be such that it does not rise higher than the subject's head and reaches the receiver at chest level.
Attempts: 3 Scoring: Maximum—3 points

Test Item No. 2: *Ball bounce and catch*
Factor: Eye and Hand Coordination
The student must drop or push an eight inch diameter utility ball to the ground and catch it on the rebound immediately, no intervening bounces are permitted. Juggling the ball, having it strike any part of the body (other than the hands), or a drop, constitutes a failure.
Attempts: 3 Scoring: Maximum—3 points

Test Item No. 3: *Touch ball swinging laterally*
Factor: Eye and Hand Coordination
With dominant hand on shoulder (palm down, index finger extended and hand motionless), the subject on command "touch" must touch laterally swinging whiffleball (softball circumference) with the index finger on the side of the ball. The instructor holds the whiffleball suspended on an 18" cord at mid-chest level and proceeds to swing the ball laterally. Commands are issued: (1) when the ball is at full arm extension across the midline; (2) when the ball is at the midline; and (3) when the ball is at full arm extension on the dominant side of the midline. An unsuccessful attempt is recorded if the subject delays response, touches the ball with other than the index finger, misses, or moves his head.
Attempts: 3 Scoring: Maximum—3 points

Fig. 2-15 Ball Bounce and Catch

Test Item No. 4: *Touch ball swinging fore and aft*
Factor: Eye and Hand Coordination
With dominant hand on hip (palm up, index finger extended and head motionless), the subject on command "touch" must touch fore and aft swinging whiffleball (softball circumference) with index finger on the under surface of the ball. The instructor holds the whiffleball suspended on an 18" cord at midchest level and issues commands: (1) when the ball is at full arm extension; (2) when the ball is at midpoint; and (3) when the ball is closest to the subject. An unsuccessful attempt is recorded if the subject delays response, touches the ball with other than the index finger, misses, or moves his head.
Attempts: 3 Scoring: Maximum—3 points

Fig. 2-16 Touch Ball Swinging Laterally

Test Item No. 5: *Bat ball with hand*
Factor: Eye and Hand Coordination
Same procedure as test item No. 4 except the subject bats the ball with an open hand held in readiness between the waist and shoulder. An unsuccessful attempt is recorded if some part of the hand does not touch some part of the ball.
Attempts: 3 Scoring: Maximum—3 points

Fig. 2-17 Touch Ball Swinging Fore and Aft

Test Item No. 6: *Bat ball with bat*
Factor: Eye and Hand Coordination
Same procedure as test item No. 4 except the subject bats the ball with a plastic whiffleball bat which is held in readiness between the waist and the shoulder. An unsuccessful attempt is recorded if some part of the bat does not touch some part of the ball.
Attempts: 3 Scoring: Maximum—3 points
Maximum total points—Eye and Hand Coordination—18 points

Fig. 2-18 Bat Ball with Hand

Fig. 2-19 Bat Ball with Bat

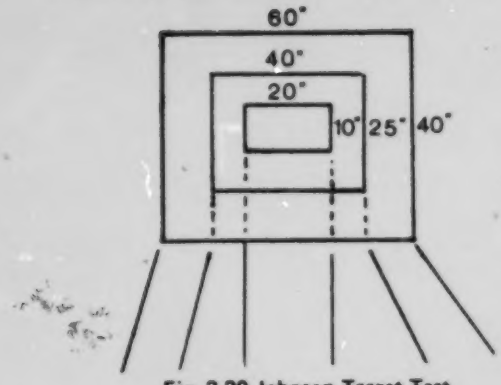


Fig. 2-20 Johnson Target Test

EYE AND HAND ACCURACY

Test Item No. 1: *Throw–Right Hand*
Factor: Eye and Hand Accuracy
The subject throws a whiffleball (softball circumference)

Fig. 2-21 Throw–Right Hand

[1] L. William Johnson, "Objective Test in Basketball for High School Boys."

at a modified version of the Johnson Test.[1] (See illustration below). The subject may use either an overhand or underhand throwing motion; minimum throwing distance ten feet. The ball must hit the target without previously touching the floor for a correct attempt. Scoring: 3 points, inner rectangle and line; 2 points, middle rectangle and line; 1 point, outer rectangle and line.
Attempts: 3 Scoring: Maximum–9 points

Test Item No. 2: *Throw–Left Hand*
Factor: Eye and Hand Accuracy
Same procedure as test item No. 1 except that subject throws with the left hand. Subject's composite score on eye and hand accuracy is the total number of points in six attempts.
Attempts: 3 Scoring: Maximum–9 pointss
Maximum total points–Eye and Hand Accuracy–18 points

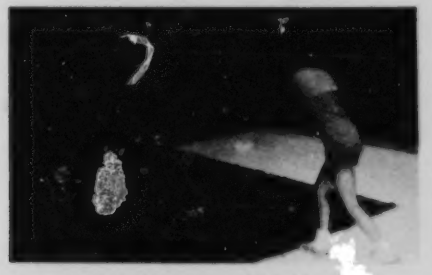


Fig. 2-22 Throw–Left Hand

Fig. 2-23 Kick–Right Foot

EYE AND FOOT ACCURACY

Test Item No. 1: *Kick–Right Foot*
Factor: Eye and Foot Accuracy
Same procedure as test item No. 1 above except the subject kicks stationary volleyball at the target with his right foot and the ball may touch the floor prior to contacting the target.
Attempts: 3 Scoring: Maximum–9 points

Test Item No. 2: *Kick–Left Foot*
Factor: Eye and Foot Accuracy
Same procedure as test item No. 1 except the subject kicks stationary volleyball with his left foot.
Attempts: 3 Scoring: Maximum–9 points

Subject's composite score on eye-foot accuracy is the total number of points scored in six attempts.
Maximum total points–Eye and Foot Accuracy–18 points

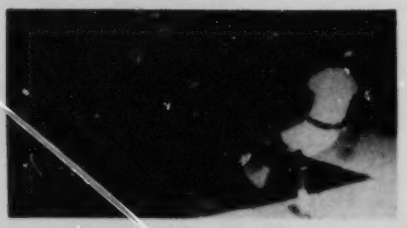


Fig. 2-24 Kick–Left Foot

The Motor Ability Test Level II presents items clustered in terms of the following factors: gross body coordination; balance and postural orientation; eye-hand coordination; eye-hand accuracy; and eye-foot accuracy. The student's raw scores in each area (for the number of attempts indicated), plus the anecdotal remarks describing how the tasks were performed, should be recorded. Each trial in gross body coordination, balance and postural orientation, and eye-hand coordination is recorded on the score sheet in the "trial" column with a plus (+) to indicate success and a zero (0) to indicate failure. The total number of pluses will be the raw score. In the areas of eye-hand accuracy and eye-foot accuracy, the target scores for each trial (or a zero if the target is missed completely) are each entered as a trial score (example 2-0-1). A total for the accuracy task is then recorded in the raw score column. Sub-totals for each component area are computed, converted to percentile and stanine scores, and recorded on the score sheet.

Motor ability test: level III. Level III, formerly referred to as the grades 3-6 instrument, was developed because of the need for an assessment tool to diagnose problems manifested by more advanced students. Generally the instrument is appropriate for advanced MR's, LD's, ED's, and motorically gifted students.

This motor ability instrument is similar in format to Level II, (in factors measured) except that the test items are more difficult to perform. Consequently, the battery should be administered to those students who attain superior performance scores on Level II.

MOTOR ABILITY TEST: LEVEL III

The tester should observe student performance carefully and record anecdotal remarks for all typical patterns so that an individualized program can be prescribed.

A. GROSS BODY COORDINATION

Test Item No. 1: *Modified Cable Jump*[1]
Factor: Gross Body Coordination
The subject holds a two-foot length of rope in front of him with both hands and attempts to jump through the rope. 5 attempts with the rope in front of the body and 5 attempts with the rope behind the body. (Fig. 2-25). An unsuccessful attempt is recorded if the subject: does not have some part of the rope exposed to view on the outer side of each hand; does not retain the same grasp at the termination of the jump; or falls during the performance of the jump. Two practice attempts shall be permitted (one from the forward position and one from the rear position).
Attempts: 10
Scoring: Pass or Fail; maximum of ten points

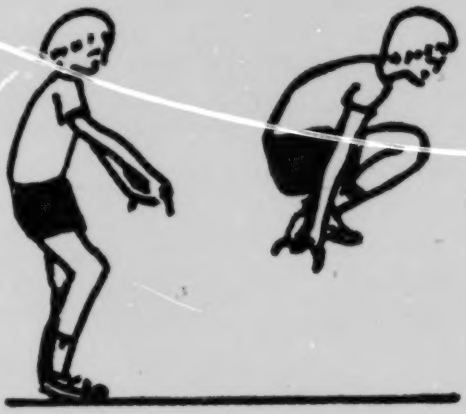


Fig. 2-25 Cable Jump, Forward/Rearward

B. BALANCE-POSTURAL ORIENTATION

Test Item No. 1: *Walk, Tapered Balance Beam*[2]
Factor: Static/Dynamic Balance
The student is to traverse the beam in a heel to toe manner (gym shoes or shoes) by alternately placing the right foot in front of and touching the left foot and vice versa. The subject may be assisted up on the beam initially, but *no further assistance is permitted.* The attempt is terminated if the subject: touches either foot to the floor; does not walk in a heel-toe fashion (i.e., touching the heel of the front foot to the toe of back foot); or traverses the beam in any other manner. One practice attempt shall be permitted. When recording, give credit for the distance achieved, i.e., the subject must touch or step beyond the line to get credit for the distance (see illustration). The score to be recorded is the front of the toe of the foot

[1] Modified version of cable jump test designed by Edwin A. Fleishman, *The Structure & Measurement of Physical Fitness*, 1964, pp. 169-170.

[2] Modified version of tapered balance beam designed by Donald Hilsendager, H.P.E.R. Dept., Temple University, Philadelphia, Pa.

TABLE 2–1
MOTOR ABILITY TEST FORM: LEVEL II

Name: _____ School: _____ Sex: _____

Age: _____ IQ: _____ Mental Age: _____ Classification: _____ Somatotype: _____

Date: _____ Classroom Teacher: _____ Total Score: _____

TEST ITEM	ATT.	FACTOR MEASURED	PRE–TEST Trials	PRE–TEST RS	PRE–TEST %	PRE–TEST S	POST–TEST Trials	POST–TEST RS	POST–TEST %	POST–TEST S
1 Walk	2	Gross Body Coord.								
2 Creep	2	Gross Body Coord.								
3 Climb–stairs	2	Gross Body Coord.								
4 Skip	2	Gross Body Coord.								
5 March-in-place	2	Gross Body Coord.								
TOTAL (Maximum–10 points)										
1 Stand–both feet (15 sec.)	3	Bal-Post. Orient.								
2 Stand–right foot (15 sec.)	3	Bal-Post. Orient.								
3 Stand–left foot (15 sec.)	3	Bal-Post. Orient.								
4 Jump–one foot leading	3	Bal-Post. Orient.								
5 Jump–both feet simultaneously	3	Bal-Post. Orient.								
6 Jump–both feet	3	Bal-Post. Orient.								
7 Hop–right foot	3	Bal-Post. Orient.								
8 Hop–left foot	3	Bal-Post. Orient.								
TOTAL (Maximum–24 points)										
1 Catch	3	Eye-hand Coord.								
2 Ball–bounce and catch	3	Eye-hand Coord.								
3 Touch-ball swg. laterally	3	Eye-hand Coord.								
4 Touch ball swg. fore/aft	3	Eye-hand Coord.								
5 Bat ball with hand	3	Eye-hand Coord.								
6 Bat ball with bat	3	Eye-hand Coord.								
TOTAL (Maximum–18 points)										
1 Throw–right hand	3	Eye-hand Accuracy								
2 Throw–left hand	3	Eye-hand Accuracy								
TOTAL (Maximum–18 points)										
1 Kick–right foot	3	Eye-foot Accuracy								
2 Kick–left foot	3	Eye-foot Accuracy								
TOTAL (Maximum–18 points)										
GRAND TOTAL (Stanine Points)										
MOTOR ABILITY INDEX										

ANECDOTAL REMARKS _____

_____

_____

_____

Symbols
RS – raw score
% –percentile score
S – stanine score

(Source: Hilsendager, D.R., H.K. Jack and Lester Mann. *Basic Motor Fitness Test for Emotionally Disturbed and Mentally Handicapped Children; Preliminary Report.*

TABLE 2–2
MOTOR ABILITY TEST FORM: LEVEL III

Name: _____ School: _____ Sex: _____

Age: _____ IQ: _____ Mental Age: _____ Classification: _____ Somatotype: _____

Date: _____ Classroom Teacher: _____ Total Score: _____

TEST ITEM	ATT.	FACTOR	PRE–TEST			POST–TEST		
			Raw Score	%ile	Stanine	Score	%ile	Stanine
1. Cable Jump[1]	10	Gross Body Coordination						
Stanine Sub-Total								
1. Walk Tapered Beam	2	Balance/Postural Orientation						
Stanine Sub-Total								
1. Ball Bouncing Right Hand	2	Eye/Hand Coordination						
2. Ball Bouncing, Left Hand	2	Eye/Hand Coordination						
Percentile/Stanine Sub-Total								
1. Throw, Right Hand	3	Eye/Hand Accuracy						
2. Throw, Left Hand	3	Eye/Hand Accuracy						
Percentile/Stanine Sub-Total								
1. Kick, Right Foot	3	Eye/Foot Accuracy						
2. Kick, Left Foot	3	Eye/Foot Accuracy						
Percentile/Stanine Sub-Total								
Total Stanine Points								
MOTOR ABILITY INDEX $\frac{\text{(Total stanine points X 10)}}{5}$ **= MAI**								

ANECDOTAL REMARKS _____

[1]Modified version of cable jump test designed by Edwin A. Fleishman, *The Structure & Measurement of Physical Fitness*, 1964, pp. 169-170.

that was last placed properly on the beam.
Attempts: 2
Scoring: Record the average score of the two attempts (in inches)

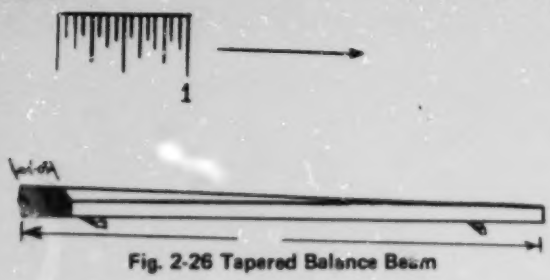


Fig. 2-26 Tapered Balance Beam

C. EYE-HAND COORDINATION

Test Item No. 1: *Ball-Bouncing, Right Hand*
Factor: Eye-Hand Coordination
The subject is to bounce an 8½" playground ball continuously, with the right hand, for thirty seconds. Any method of bouncing the ball is acceptable as long as the ball is not touched until it reaches at least hip level height. (Refer to Fig. 2-27 for proper dribbling position.) If the subject exceeds the bending limit, stop the performance and repeat. If the subject loses control of the ball, discontinue counting until he starts to bounce the ball again. One practice attempt shall be permitted.
Attempts: 2
Scoring: Record the average bounces for the two attempts

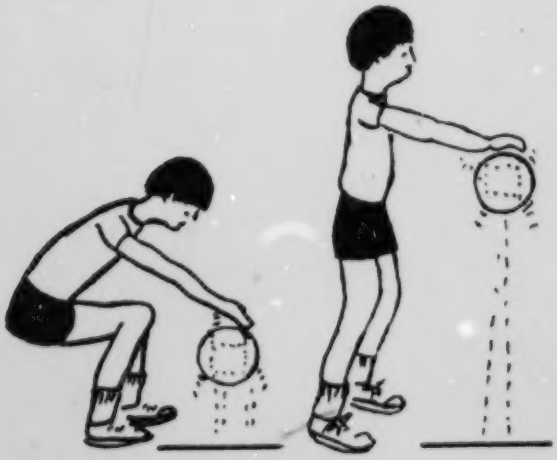


Fig. 2-27 Dribbling Procedures

Test Item No. 2: *Ball-Bouncing, Left Hand*
Factor: Eye-Hand Coordination
The same procedure as for test item No. 1 except that the subject bounces the ball with his left hand.
Attempts: 2
Scoring: Record the average bounces for the two attempts
Total Eye-Hand Coordination Score: Record the average of the two scores (right and left hand)

D. EYE-HAND ACCURACY

Test Item No. 1: *Throw, Right Hand*
Factor: Eye-Hand Accuracy
The subject throws a whiffleball (softball circumference) at a modified version of the Johnson Target Test. The subject may use either an overhand or underhand throwing motion; the throwing distance is fifteen feet. The ball must hit the target without previously touching the floor for a correct attempt. Scoring: 3 points inner rectangle and line; 2 points middle rectangle and line; 1 point, outer rectangle and line.
Attempts: 3
Scoring: Total points for three attempts

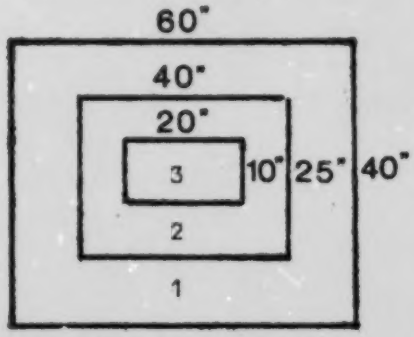


Fig. 2-28 Johnson Target Test

The test is scored in accordance with the test directions. Table 2–2 provides a format for recording pupil performance.

Test Item No. 2: *Throw, Left Hand*
Factor: Eye-Hand Accuracy
Same procedure as test item No. 1 except that subject throws with the left hand.
Attempts: 3
Scoring: Total points for three attempts
(**Note**: Subject's composite score on eye-hand accuracy is the total number of points in six attempts.)

E. EYE-FOOT ACCURACY

Test Item No. 1: *Kick, Right Foot*
Factor: Eye-Foot Accuracy
The subject kicks stationary volleyball at the target with his right foot; the ball *may not* touch the floor prior to contacting the target for a valid attempt (target distance, *15 feet)*. Scoring: 3 points, inner rectangle and line; 2 points middle rectangle and line; 1 point, outer rectangle and line.
Attempts: 3
Scoring: Total points for three attempts

Test item No. 2: *Kick, Left Foot*
Factor: Eye-Foot Accuracy
Same procedure as test item No. 1 except the subject kicks the stationary volleyball with his left foot.
Attempts: 3
Scoring: Total points for three attempts
(**Note:** Subject's composite score on eye-foot accuracy is the total number of points scored in six attempts.)

Motor ability test: level I. This test, the last motor instrument developed, was necessitated by comments from teachers who indicated that neither of the previous batteries could be administered to severely, profoundly, or low trainable retarded children because of the inability of the children to understand the requests. For consistency of format, the Project Director retained the ACTIVE factor structure and adapted it to a format designed by Fait.[1]

Motor Ability Test: Level I

The instrument is self explanatory in the criterion-referenced design of the test items (i.e., it describes specific student behavior to be manifested).

A. GROSS BODY COORDINATION

Test Item No. 1: *Walk*
Factor: Gross Body Coordination
0 – Makes no attempt to walk (when requested)
1 – Walks with assistance
2 – Walks with an irregular bilateral pattern
3 – Walks with proper bilateral pattern for less than 15 feet
4 – Walks with proper bilateral pattern for 15 or more feet
Correct bilateral pattern: left arm-right foot and right arm-left foot.

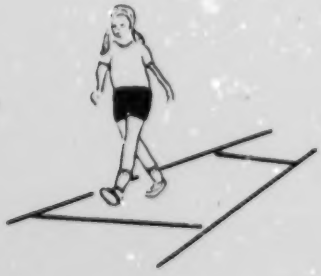


Fig. 2-29 Walk

[1] Format patterned after the "Basic Movement Performance Profile" designed by H.F. Fait, *Special Physical Education: Adapted, Corrective, Developmental*, 1972, –. 208-210.

Test Item No. 2: *Creep*
Factor: Gross Body Coordination
0 – Makes no attempt to creep (when requested)
1 – Will creep when physically assisted
2 – Creeps with an irregular bilateral pattern
3 – Creeps alternating hands and knees for less than 10 feet
4 – Creeps properly for 10 or more feet

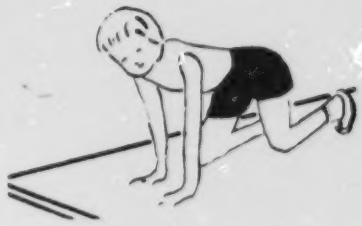


Fig. 2-30 Creep

Fig. 2-31 Climb Stairs

Test Item No. 3: *Climb-stairs*
Factor: Gross Body Coordination
0 – Makes no attempt to walk up stairs (when requested)
1 – Walks up one step and down with assistance
2 – Walks up and down 4 steps with assistance
3 – Walks up and down 4 steps; two feet on each step
4 – Walks up and down 4 steps; alternating one foot on each step

Fig. 2-32 Skip

Test Item No. 4: *Skip*
Factor: Gross Body Coordination
0 – Makes no attempt to skip (when requested)
1 – Steps from left to right foot or right to left foot
2 – Hops on left or right foot
3 – Combines stepping and hopping in an irregular pattern
4 – Skips at least 10 feet in a smooth manner

Test Item No. 5: *March-in-Place*
Factor: Gross Body Coordination
0 – Makes no attempt to march-in-place (when requested)
1 – Marches-in-place if physically assisted
2 – Marches in an irregular pattern
3 – Marches in a rhythmical pattern; 15 steps in 15 seconds
4 – Marches in a rhythmical pattern; 30 steps in 15 seconds

Note: The tester sets the cadence by clapping 1 clap per second (15 seconds) and 2 claps per second (15 seconds)

Maximum Total Points–Gross Body Coordination–20 points

Fig. 2-33 March-In-Place

BALANCE AND POSTURAL ORIENTATION

Test Item No. 1: *Stand-both feet*
Factor: Balance-Postural Orientation
0 – Makes no attempt to assume the standing position (when requested)
1 – Assumes the standing position, but will not extend the arms forward from the shoulders at a 90 degree and/or keep his eyes closed
2 – Assumes the correct standing position (arms extended and eyes closed) when assisted
3 – Assumes the correct standing position, but shifts his feet or moves his arms 15 degrees from the 90 degree position prior to the elapse of 15 seconds
4 – Assumes the correct standing position for 15 seconds

Fig. 2-34 Stand-Both-Feet

Test Item No. 2: *Stand-right foot*
Factor: Balance-Postural Orientation
0 – Makes no attempt to assume the standing position on right foot (when requested)
1 – Assumes the standing position incorrectly, i.e., does not raise the left foot
2 – Assumes the correct standing position (weight on right foot, eyes open) when assisted
3 – Assumes the correct standing position, but shifts right foot or touches left foot to right leg, foot, floor or any other supporting structure prior to the elapse of 15 seconds
4 – Assumes the correct standing position for 15 seconds

Fig. 2-35 Stand-Right-Foot

Fig. 2-36 Stand-Left-Foot

Test Item No. 3: *Stand-left foot*
Factor: Balance-Postural Orientation

0 – Makes no attempt to assume standing position on left foot (when requested)
1 – Assumes the standing position incorrectly, i.e., does not raise the right foot
2 – Assumes the correct standing position (weight on left foot, eyes open) when assisted
3 – Assumes the correct standing position, but shifts left foot or touches right foot to left leg, foot, floor or any other supporting structure before time lapse of 15 seconds
4 – Assumes the correct standing position for 15 seconds

Fig. 2-37 Jump-Land Staggered Feet

Test Item No. 4: *Jump-land feet staggered*
Factor: Balance-Postural Orientation

0 – Makes no attempt to jump off 18" high step or bench (when requested)
1 – Steps down from step or bench with assistance
2 – Jumps with two-foot take-off and lands with assistance
3 – Jumps with two-foot take-off, but lands incorrectly, i.e., does not land with feet staggered or loses balance
4 – Jumps with two-foot take-off and lands correctly

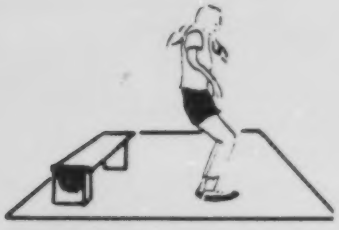


Fig. 2-38 Jump-Land Feet Parallel

Test Item No. 5: *Jump-land feet parallel*
Factor: Balance-Postural Orientation

0 – Makes no attempt to jump off 18" high step or bench (when requested)
1 – Steps down from step or bench with assistance
2 – Jumps with two-foot take-off and lands with assistance
3 – Jumps with two-foot take-off, but lands incorrectly, i.e., does not land with feet parallel or loses balance
4 – Jumps with two-foot take-off and lands correctly

Fig. 2-39 Stationary Jump

Test Item No. 6: *Stationary jump-both feet*
Factor: Balance-Postural Orientation

0 – Makes no attempt to jump (when requested)
1 – Jumps and lands with assistance
2 – Hops and lands with one-foot take-off
3 – Jumps with two-foot take-off, lands without stopping, loses balance, uses a support, or steps on, or out of an 18" square
4 – Performs the jumping task correctly

Fig. 2-40 Stationary Hop-Left Foot

Fig. 2-41 Stationary Hop-Right-Foot

Test Item No. 7: *Stationary hop-left foot*
Factor: Balance-Postural Orientation

0 – Makes no attempt to hop (when requested)
1 – Hops with assistance
2 – Hops irregularly, i.e., intermixes hops, jumps and leaps
3 – Hops on left foot incorrectly, i.e., does not hop 3 times without stopping, loses balance, uses a support, or steps on, or out of an 18" square
4 – Performs the hopping task correctly

Test Item No. 8: *Stationary hop-right foot*
Factor: Balance-Postural Orientation

0 – Makes no attempt to hop (when requested)
1 – Hops with assistance
2 – Hops irregularly, i.e., intermixes hops, jumps and leaps
3 – Hops on right foot incorrectly, i.e., does not hop 3 times without stopping, loses balance, uses a support, or steps on, or out of an 18" square
4 – Performs the hopping task correctly

Maximum Total Points–Balance-Postural Orientation 32 points

EYE-HAND COORDINATION

Test Item No. 1: *Catch*
Factor: Eye-Hand Coordination

0 – Makes no attempt to catch a whiffleball (softball circumference)
1 – Keeps eyes on the ball momentarily, but does not make contact with hands
2 – Keeps eyes on the ball, contacts it with hands, but does not catch the ball
3 – Catches the ball incorrectly, i.e., juggles the ball, or supports the ball with any other part of the body other than the hands
4 – Performs the task correctly (3 correct catches)

Note: The toss must be from a distance of 8 feet and thrown in a soft underhand manner. The trajectory should be such that it does not rise higher than the subject's head and reaches the receiver at chest level.

Fig. 2-42 Catch

Test Item No. 2: *Ball bounce and catch*
Factor: Eye-Hand Coordination

0 – Makes no attempt to bounce and catch a playground ball (8" diameter)
1 – Bounces the ball, but does not make contact with hands
2 – Bounces ball, keeps eyes on ball, makes contact with hands, but does not catch it
– Bounces the ball, but catches it incorrectly, i.e., juggles the ball or supports the ball with another part of the body other than the hands
4 – Bounces and catches the ball with the hands (3 times)

Fig. 2-43 Ball Bounce and Catch

Test Item No. 3: *Touch ball swinging laterally*
Factor: Eye-Hand Coordination

0 – Makes no attempt to touch a stationary or swinging whiffleball (softball circumference)
1 – Touches a stationary ball with hand

Fig. 2-44 Touch Ball Swinging Laterally

2 – Touches a swinging ball with hand
3 – Touches a stationary ball with index finger 3 times; ball suspended left of mid-line, mid-line, and right of mid-line (head permitted to rotate)
4 – Touches a moving ball with index finger 3 times; ball to be touched on command left of mid-line, mid-line, and right of mid-line (head to remain motionless)

Note: The instructor holds the whiffleball suspended on an 18" cord at mid-chest level.

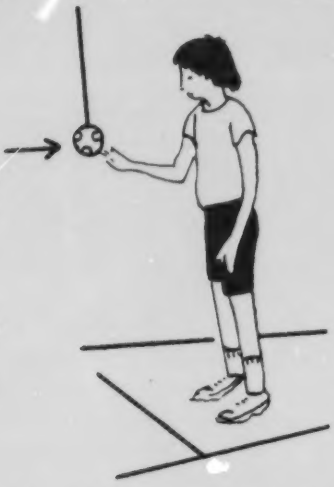


Fig. 2-45 Touch Ball Swinging Fore and Aft

Test Item No. 4: *Touch ball swinging fore and aft*
Factor: Eye-Hand Coordination
0 – Makes no attempt to touch a stationary or swinging whiffleball (softball circumference)
1 – Touches a stationary ball with hand
2 – Touches a ball swinging fore and aft with hand
3 – Touches stationary ball with index finger 3 times (ball suspended at mid-line–24", 18", and 12" from the student)
4 – Touches moving ball with index finger 3 times; ball to be touched on command at distance of 24", 18", and 12" from the student

Fig. 2-46 Bat Ball with Hand

Test Item No. 5: *Bat ball with hand*
Factor: Eye-Hand Coordination
0 – Makes no attempt to bat a stationary or swinging whiffleball with hand
1 – Swings at a stationary ball, but does not strike the ball cleanly (i.e., hits the string)
2 – Swings at a moving ball, but does not strike the ball cleanly
3 – Bats a stationary ball with the hand correctly (3 times)
4 – Bats a moving ball (fore and aft) with the hand correctly (3 times)

Fig. 2-47 Bat Ball with Bat

Test Item No. 6: *Bat ball with bat*
Factor: Eye-Hand Coordination
0 – Makes no attempt to strike a stationary or moving whiffleball with a plastic bat
1 – Swings bat at a stationary whiffleball, but does not strike the ball cleanly (i.e., hits the string)
2 – Swings bat at moving whiffleball, but does not strike the ball cleanly
3 – Strikes a stationary ball with bat correctly 3 times
4 – Strikes a moving ball (fore and aft) with bat correctly (3 times)

Maximum Total Points–Eye-Hand Coordination–24 points

EYE-HAND ACCURACY

Test Item No. 1: *Throw-right hand* (Refer to page 10 for target dimensions)
Factor: Eye-Hand Accuracy
0 – Makes no attempt to throw whiffleball with right hand
1 – Grasps ball with right hand and releases in an attempt to throw
2 – Throws or tosses the ball at a target 10 feet away, striking on or within the overall boundaries 1 of 3 attempts. The ball must hit the target without previously touching the floor for a correct attempt.

TABLE 2–3
MOTOR ABILITY TEST FORM: LEVEL I

Name: _____ School: _____ Sex: _____

Age: _____ IQ: _____ Mental Age: _____ Classification: _____ Somatotype: _____

Date: _____ Classroom Teacher: _____ Total Score: _____

		PRE–TEST			POST–TEST		
TEST ITEM	FACTOR MEASURED	Raw Score	%	S	Raw Score	%	S
1 Walk	Gross Body Coord.						
2 Creep	Gross Body Coord.						
3 Climb stairs	Gross Body Coord.						
4 Skip	Gross Body Coord.						
5 March-in-place	Gross Body Coord.						
TOTAL (Maximum–20 points)							
1 Stand–both feet (15 sec.)	Bal-Post. Orient.						
2 Stand–right foot (15 sec.)	Bal-Post. Orient.						
3 Stand–left foot (15 sec.)	Bal-Post. Orient.						
4 Jump–one foot leading	Bal-Post. Orient.						
5 Jump–both feet simultaneously	Bal-Post. Orient.						
6 Jump–both feet	Bal-Post. Orient.						
7 Hop–right foot	Bal-Post. Orient.						
8 Hop–left foot	Bal-Post. Orient.						
TOTAL (Maximum–32 points)							
1 Catch	Eye-hand Coord.						
2 Ball–bounce and catch	Eye-hand Coord.						
3 Touch ball swg. laterally	Eye-hand Coord.						
4 Touch ball swg. fore/aft	Eye-hand Coord.						
5 Bat ball with hand	Eye-hand Coord.						
6 Bat ball with bat	Eye-hand Coord.						
TOTAL (Maximum–24 points)							
1 Throw–right hand	Eye-hand Accuracy						
2 Throw–left hand	Eye-hand Accuracy						
3 Kick–right foot	Eye-hand Accuracy						
4 Kick–left foot	Eye-hand Accuracy						
TOTAL (Maximum–16 points)							
GRAND TOTAL (Stanine Points)							
MOTOR ABILITY INDEX							

ANECDOTAL REMARKS

_____

_____

_____

Symbols
%–Percentile score
S–Stanine Score

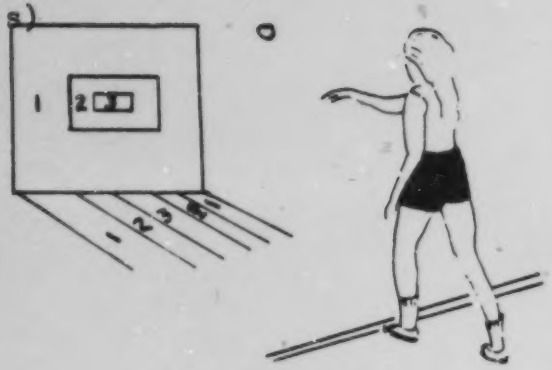


Fig. 2-48 Throw-Right Hand

3 – Two successful attempt in 3 tries
4 – Three successful attempts in 3 tries

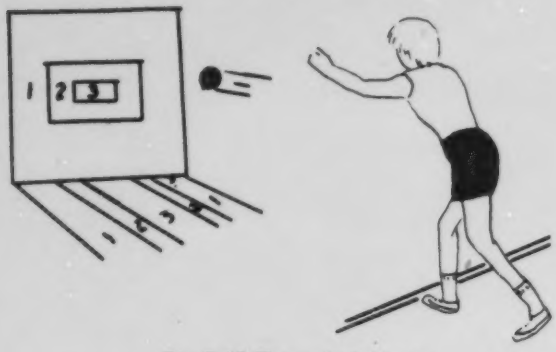


Fig. 2-49 Throw Left Hand

Test Item No. 2: *Throw-left hand*
Factor: Eye-Hand Accuracy
0 – Makes no attempt to throw whiffleball with left hand
1 – Grasps ball with left hand and releases in an attempt to throw
2 – Throws or tosses the ball at target 10 feet away, striking on or within the overall boundaries 1 of 3 attempts. The ball must hit the target without previously touching the floor for a correct attempt
3 – Two successful attempts in 3 tries
4 – Three successful attempts in 3 tries
Maximum Total Points–Eye-Hand Accuracy–8 points

E. EYE-FOOT ACCURACY

Test Item No. 1: *Kick-right foot*
Factor: Eye-Foot Accuracy
0 – Makes no attempt to kick stationary volleyball with right foot
1 – Kicks ball at target, but does not strike it
2 – Kicks ball at target 10 feet away, striking on or within the overall boundaries 1 of 3 attempts. The ball may touch the floor prior to contacting the target
3 – Two successful attempts in 3 tries[1]
4 – Three successful attempts in 3 tries

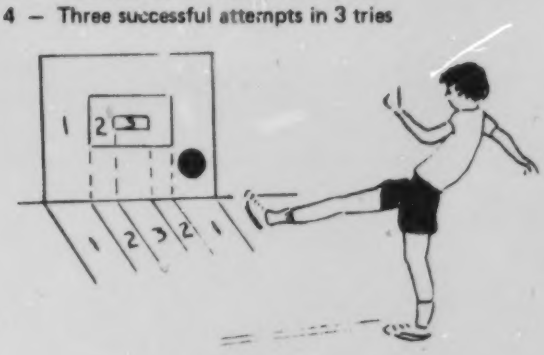


Fig. 2-50 Kick Right Foot

Test Item No. 2: *Kick-left foot*
Factor: Eye-Foot Accuracy
0 – Makes no attempt to kick stationary volleyball with left foot
1 – Kicks ball at target, but does not strike it
2 – Kicks ball at target 10 feet away, striking on or within the overall boundaries 1 of 3 attempts. The ball may touch the floor prior to contacting the target
3 – Two successful attempts in 3 tries
4 – Three successful attempts in 3 tries
Maximum Total Points–Eye-Foot Accuracy–8 points

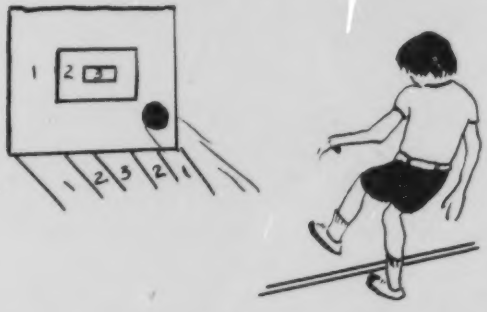


Fig. 2-51 Kick Left Foot

[1] A successful attempt is recorded if the ball strikes within the confines of the target.

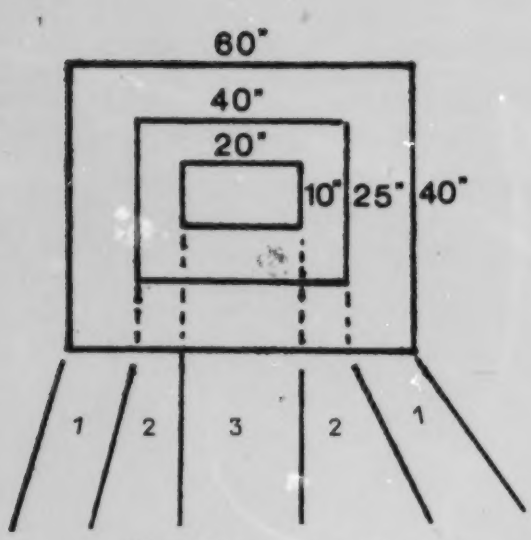


Fig. 2-52 Johnson Target Test

Individual item scores, ranging from "0" to "4" are recorded on Table 2-3. Upon completion of testing, the teacher should total the raw scores for each factor and record in the appropriate boxes. (Refer to Table 2-3.)

Additional remarks. Once trained, teachers tend to administer one instrument because they view that as the correct procedure, regardless of the need or problems of the child. However, the DP process views the child as most important. Consequently, no one instrument is necessarily the answer. It is quite conceivable that the teacher may have to interchange battery test items for a better diagnosis of pupil performance. For example, one could administer all items on Level II except for the balance-postural orientation (BPO) tasks. If the BPO tasks are too easy, they should be replaced with the BPO task on Level II! (tapered balance beam). **The important rule to remember is to select the test battery, or hybrid thereof, which will provide the greatest amount of information about the learner.**[1]

Description of Physical Fitness Test Instruments

Physical education is the only segment of the total school curriculum which can enable each student to develop an optimum level of physical fitness. The minimal administration of a pre- and post-test each year is necessary to secure appropriate assessment, prescription and evaluation information. (Ideally, students should also be tested at midyear so that meaningful activity or program modifications can be made at that time.)

While the testing theory is sound, the logistics of testing thousands of students two or three times a year can become extremely time-consuming, especially if a test battery takes the better part of a week to administer. After experimentation with a variety of national instruments, the Township of Ocean School District decided to develop its own instrument. The battery had to conform to the following criteria:

1. Consist of test items designed so that every student could attain some measure of achievement, yet no student could attain the ultimate score (discriminatory power).
2. Include test items that would measure important aspects of physical fitness.
3. Apply to all students in grades K-12 so that interpretable cumulative records could be maintained.
4. Require a maximum of two 45-minute periods to test 30-40 students.
5. Require only the use of test supplies and equipment readily available in most physical education departments.
6. Provide for ease of administration, preferably student self-testing and recording.
7. Be highly reliable (minimal test-retest error) and valid (measure what it purports to measure).

The Township of Ocean School District Physical Fitness Test: Level II presented on the following pages complies with these criteria.

Township of Ocean physical fitness test: Level II. This instrument provides a viable means of gathering baseline data relative to the physical proficiency of normal students in grades K-12, mentally retarded students who are high trainables or educables, learning disabled, and the emotionally disturbed. A strong feature of the battery is that all test factors remain constant for all age levels and for both sexes. (The test item for cardiorespiratory endurance is varied to maximize discrimination.)

Township of Ocean Physical Fitness Test: Level II

Test Item No. 1: *Static arm hang*
Factor: Arm and Shoulder Strength

After demonstration, the subject is assisted to the starting position (with arms flexed and chin above bar). The subject is not allowed to touch any part of his head to the bar, to kick, struggle, or move his body. Palms are to face away from the body. Special efforts are to be made to keep the subject in the starting position, especially as they begin to tire. The score recorded is the *number* of seconds from the signal "go" (starting position) until the arms are "locked" completely straight (finished position).
Attempts: 1
Scoring: Total suspension time in seconds

[1] The ACTIVE Office is adapting two additional DP motor tools to meet the unique needs of autistic and multiple handicapped children.

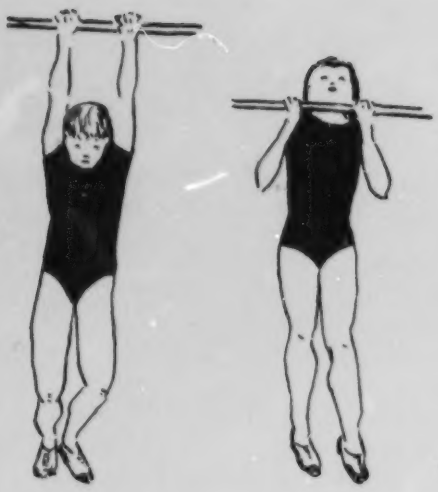


Fig. 2-53 Static Arm Hang

Fig. 2-54 Modified Sit-Ups

Test Item No. 2: *Modified sit-ups (curl-ups)*
Factor: Abdominal Strength

After demonstration, the subject assumes a supine position on a mat, with arms straight and palms resting on the thighs. On the command "go," the subject raises his head and shoulders and slides his hands forward until he touches the upper edges of his kneecaps; he, then, immediately returns to the supine position. To increase reliability and objectivity, the instructor places his hand across the child's kneecaps and counts as the child touches his arm.

The subject is not permitted to "bounce" up, raise hands off legs, or rest between curl-ups (stress a steady rhythm). The score recorded is the number of times the student touches the extended arm properly. Repeat the count when performing incorrectly.
Attempts: 1
Scoring: Total correct curl-ups.

Test Item No. 3: *Standing broad jump*
Factor: Explosive Leg Power

After demonstration, the subject stands with his toes behind the take-off line, his feet several inches apart. He is to jump as far forward as possible. Before jumping, he bends his knees and swings his arms forward. No restrictions are placed on his arm movements. However, the student is informed the jump will not count if he falls backward. The score recorded is the best jump of three attempts, measured and *recorded in total inches.* Measurements are taken from the back of the take-off line to the back of the heel nearest the take-off line. The scorer should stand to the side of the subject to observe the exact point of contact of the rear heel.
Attempts: 3
Scoring: Best distance recorded in inches

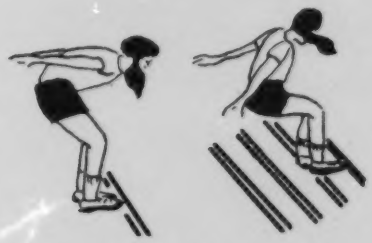


Fig. 2-55 Standing Broad Jump

Test Item No. 4:
200 Yard run; 8-minute run; 12-minute run
Factor: Cardiorespiratory Endurance
a. 200 Yard run, ages 6-11 (grades 1-6)

After demonstration of the sprint start, the subjects are requested to assume the starting position with fingertips behind the starting line. Commands are: "take your mark," "get set," and "go." The instructor should start the time when the subject "moves" rather than on the command "go." Encourage the students to run at full speed beyond the finish line. If a student does not run as fast as he can, do not record his score, as the time will be invalid. For consistency, run the 200 yard dash in a straight line (preferably on turf). Gym shoes or shoes may be worn; stockings or bare feet are not permitted.
Attempts: 1 or more, if necessary
Scoring: Time in seconds

Fig. 2-56 200 Yard Run

b. 8-Minute run, ages 12-13 (grades 7-8)

(1) Sub-divide the 440 yard track into eight equal sections 55 yards each section. (2) Place a flag marker at each section, e.g., "1," "2," "3," etc. (3) "Pair" all students as "1's" and "2's," prior to testing. (4) On command have all of the "1's" (half the class) run for an 8-minute period. The No. 2's are to keep a record of the distance covered by their partners. (5) At the termination of the 8-minute period, the instructor blows the whistle, terminating the run. The No. 2's report their partner's scores to the recorder, e.g., 3.6 would indicate three complete laps, plus the passing of six markers. (6) Reverse the procedure and have the No. 2's run and the No. 1's act as recorders.

Attempts: 1

Scoring: Total laps, plus flags passed in 8 minutes

c. 12-Minute run, ages 14-18 (grades 9-12) The same test directions as for the 8-minute run except that the students continue running for a 12-minute period.

Attempts: 1

Scoring: Total laps, plus flags passed in 12 minutes

The Township of Ocean Physical Fitness Test form (Table 2-4) includes test items that measure: arm and shoulder strength; abdominal strength; explosive leg power; and cardiorespiratory endurance. The student's raw score in each area should be recorded in the appropriate "raw score" column (three of which have been provided for the recording of test scores administered at periodic intervals). Anecdotal remarks describing how the task is performed are included in the area provided.

The table on the bottom of Table 2-4 provides the information necessary to convert percentiles to stanine scores. A student's Physical Fitness Index (PFI) score can be determined by applying the formula listed in the middle of the table.

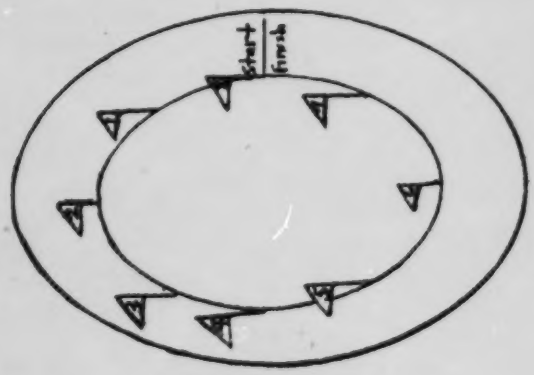


Fig. 2-57 8-Minute Run

[1]The test format is based on the design developed at the Mansfield Training School, Connecticut; published in H.F. Fait, *Special Physical Education: Adapted, Corrective, Developmental*, pp. 208-210; and modified at Texas Woman's University.

Township of Ocean physical fitness test: Level I. The Level I test was modified for use with low trainable, severely or profoundly retarded, or ambulatory retarded individuals who could not perform the tasks without assistance. It is recommended that the instrument be used as a screening device rather than as a test.

The test score is the sum of the four scores attained on the four task items. Thus, a student's composite score can range from 0-16. Progress can be noted by making a pre-post comparison. However, the instrument is of greater value if individual progress is analyzed on each of the items. (See scoring form on page 25.)

Township of Ocean Physical Fitness Test: Level I

Modified Physical Fitness Test[1]

Directions: Circle appropriate response

Test Item No. 1: *Static arm hang*

Factor: Arm and Shoulder Strength

Position and Procedure: Bent arm hang, with overhand grasp. Suspension time is the number of seconds from the signal "go" (starting position) until the arms are "locked" completely straight.

0 – Makes no attempt to grasp bar
1 – When assisted, grasps bar and assumes the correct hanging position
2 – Assumes the correct hanging position
3 – Assumes the correct hanging position (unassisted) for a minimum of 5 seconds
4 – Assumes the correct hanging position (unassisted) for 10 seconds

Fig. 2-58 Static Arm Hang

Test Item No. 2: *Modified sit-ups (curl-ups)*

Factor: Abdominal Strength

Position and Procedure: Supine position on a mat, with arms straight and palms resting on the thighs.

0 – Makes no attempt to rise to a sit-up position
1 – Rises to a sit-up position, when assisted

TABLE 2–4
PHYSICAL FITNESS TEST FORM: LEVEL II

NAME:_____ SCHOOL:_____ SEX:_____

AGE:_____ IQ:_____ MENTAL AGE:_____ CLASSIFICATION:_____ SOMATOTYPE:_____

DATE:_____ INSTRUCTOR:_____ HEIGHT:_____ WEIGHT:_____

TEST ITEM	FACTOR	RAW SCORE			PERCENTILE			STANINE		
		Test 1	Test 2	Test 3	Test 1	Test 2	Test 3	Test 1	Test 2	Test 3
Static Arm Hang	Arm Strength	sec.	sec.	sec.						
Modified Sit-Ups	Abdominal Strength									
Standing Broad Jump	Leg Strength	in.	in.	in.						
200 Yard Dash[1]	Endurance	sec.	sec.	sec.						
8-Minute Run[2]	Endurance									
12-Minute Run[3]	Endurance									
TOTAL STANINE POINTS										
PFI =	Total Stanine x 10 / Number of Tests			=		x 10 / 4		PFI Score =		

ANECDOTAL REMARKS

Table for Converting Percentiles to Stanines

Percentile Intervals	Stanines	
97 and above	9	Very High
90–96	8	
80–89	7	High
65–79	6	
35–64	5	Average
20–34	4	Low
10–19	3	
4– 9	2	Very Low
3–and below	1	

[1]Administered to students, ages eleven and below

[2]Administered to students, ages twelve and thirteen

[3]Administered to students, ages fourteen and above

2 – Raises head off the mat unassisted
3 – Raises head and shoulders off the mat unassisted
4 – Raises body and touches fingertips (arms extended) to kneecaps

Fig. 2-59 Modified Sit-Ups

Test Item No. 3: *Standing broad jump*
Factor: Explosive Leg Power
Position and Procedure: Toes behind the take-off line. Measurements are taken from the back of the take-off line to the back of the heel nearest the take-off line.

0 – Makes no attempt to jump
1 – Hops or leaps rather than jumps, i.e., one-foot take-off and lands on the same foot, or on the other foot
2 – Jumps in an uncoordinated fashion (without arm swing and knee flexion)
3 – Coordinates arm swing with jump
4 – Bends knees and swings arms forward in unison with jump and lands with knees flexed

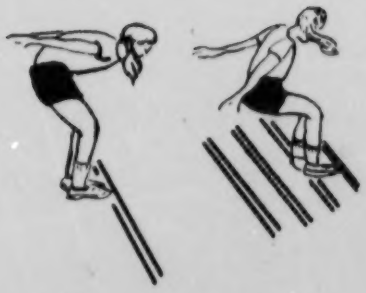


Fig. 2-60 Standing Broad Jump

Test Item No. 4: *Running*
Factor: Cardiorespiratory Endurance
Position and Procedure: Runs a pre-determined distance, upon command.

0 – Makes no attempt to run
1 – Runs only when assisted
2 – Runs and stops in an irregular pattern
3 – Runs the pre-determined distance in an awkward manner, i.e., irregular stride and a lack of total body coordination
4 – Responds on command and runs the pre-determined distance with proper form

Fig. 2-61 Running

Anecdotal Remarks

Total Points (Maximum of 16 points) _____

_____

_____

_____

TABLE 2-5

PHYSICAL FITNESS TEST FORM: LEVEL I

NAME: _____ SCHOOL: _____ SEX: _____

AGE: _____ IQ: _____ MENTAL AGE: _____ CLASSIFICATION: _____

DATE: _____ TOTAL SCORE: _____

TEST ITEM NO. 1: Static Arm Hang	FACTOR: Arm and Shoulder Strength	PROCEDURE	TEST NO. I	TEST NO. II
0—Makes no attempt to grasp bar 1—Hanging position, assisted 2—Assumes correct hanging position 3—Assumes hanging position (unassisted) for a minimum of 5 seconds 4—Assumes hanging position (unassisted) for 10 seconds		Bent arm hang, with overhand grasp. Suspension time is the number of seconds from the signal "go" (starting position) until the arms are "locked" completely straight.		
TEST ITEM NO. 2 Modified Sit-Ups	**FACTOR: Abdominal Strength**	**PROCEDURE**		
0—Makes no attempt to rise to a sit-up position 1—Rises to a sit-up position, when assisted 2—Raises head off the mat unassisted 3—Raises head and shoulders off the mat unassisted 4—Raises body and touches fingertips (arms extended) to kneecaps		Supine position on a mat, with arms straight and palms resting on the thighs.		
TEST ITEM NO. 3: Standing Broad Jump	**FACTOR: Explosive Leg Power**	**PROCEDURE**		
0—Makes no attempt to jump 1—Hops or leaps rather than jumps 2—Jumps in uncoordinated fashion (without arm swing and knee flexion) 3—Coordinates arm swing with jump 4—Bends knees and swings arms forward in unison with jump and lands with knees flexed		Toes behind the take-off line. Measurements are taken from the back of the take-off line to the back of the heel nearest the take-off line.		
TEST ITEM NO. 4: Running	**FACTOR: Cardio-respiratory Endurance**	**PROCEDURE**		
0—Makes no attempt to run 1—Runs only when assisted 2—Runs and stops in an irregular pattern 3—Runs the predetermined distance in an awkward manner 4—Responds on command and runs the predetermined distance with proper form		Runs a predetermined distance, upon command.		
Maximum Score: 16 Points		**Total Score:**		

Prescriptive Remarks: _____

Additional remarks. Comments from adopter districts have been very positive, stressing ease of administration, minimal testing time and the simplified format for determining percentiles and PFI scores. Special limitations for administering the 200 yard, 8-minute and 12-minute runs are cited as the major drawback. Districts have been advised to modify the endurance events in accordance with the available facilities and to develop their own norms based on the modification(s).

NOTES:

CHAPTER III

ADMINISTRATION OF MOTOR ABILITY AND PHYSICAL FITNESS TEST INSTRUMENTS

Chapter II described the test batteries and scoring procedures. This chapter provides the teacher with guidelines for administering the test batteries. Its intent is threefold:

1. to provide a rationale for the use of the batteries included in the manual, based on reliability and validity studies;
2. to provide general guidelines for test administration so that testing error is minimized and student involvement is maximized;
3. to present some important considerations.

ACTIVE's Reliability and Validity Studies

Before adopting a test battery, one should carefully review the descriptive information provided with the instrument(s). For example, are the test items stable (i.e., reliable on a test-retest basis)? Do the batteries measure what the author states they measure (validity)? Are norms available? What student population was used to establish the norms? Is the "norm" population compatible with the students you plan to test?

Presentation of statistical information. For ease of interpretation, the descriptive information relative to the ACTIVE test batteries is presented in table form. Tables 3-1 and 3-2, respectively, include the information pertaining to the motor ability and physical fitness instruments.

Analysis. Reliability studies were conducted in six New Jersey school districts. All test-retest data were gathered during the same week (usually with one day intervening between tests). The Monroe Calculator, Model 1860 was used to compute Pearson product-moment correlation coefficients.

A review of the coefficients of reliability indicates:

1. the physical fitness test items evidenced greater stability than the motor ability test items;
2. a reasonable consistency prevailed between the correlational scores of the handicapped and non-handicapped population;
3. the two motor ability batteries are reliable and valid instruments for assessing the motor performance of normal and learning disabled students;
4. the physical fitness battery is a reliable and valid instrument for assessing the physical profiency of normal students;
5. additional correlational studies (e.g., motor ability—mentally retarded and physical fitness—mentally retarded and learning disabled) should be conducted.

General Guidelines for Test Administration

Teachers frequently begrudge the time allotted for test administration as detracting from valuable time needed for skill instruction. Granted that testing time should not place inordinate demands on the instructional program, its elimination or minimal use, however, is analogous to the "piloting of a rudderless ship."

The ACTIVE Program stresses the use of a variety of formal and informal test instruments, since such testing

TABLE 3-1
RELIABILITY AND VALIDITY OF MOTOR INSTRUMENTS
MOTOR ABILITY TEST: LEVEL II

Factor	Item(s)	n	Age(s)	Sex	Student Population[1]	School District	Correlation	Norms Available[2]
GBC	5	23	5-11	M/F	C.H.	Kean College	.86	
		15	6-10	M/F	N.I.	Jersey City	.61	State
		23	5-11	M/F	C.H.	Kean College	.93	
BPO	8	15	6-10	M/F	N.I.	Jersey City	.77	State
		23	5-11	M/F	C.H.	Kean College	.86	
EHC	6	15	6-10	M/F	N.I.	Jersey City	.73	State
		23	5-11	M/F	C.H.	Kean College	.54	
EHA	Target-throw	15	6-10	M/F	N.I.	Jersey City	.41	State
		23	5-11	M/F	C.H.	Kean College	.70	
EFA	Target-kick	15	6-10	M/F	N.I.	Jersey City	.39	State
		23	5-11	M/F	C.H.	Kean College	.94	
M.A.I.	Test Battery	15	6-10	M/F	N.I.	Jersey City	.85	
	Test Battery	42	5-6	M	Normal	Twp. of Ocean	.60	Local
	Test Battery	41	5-6	F	Normal	Twp. of Ocean	.53	Local

Validity: Test Battery validated by a panel of experts.

MOTOR ABILITY TEST: LEVEL III

GBC	Cable Jump	16	11-12	F	Normal	Livingston	.88	State/National
		19	9-15	M/F	E.D.	Jersey City	.83	State
		39	9-15	M/F	N.I.	Jersey City	.88	State
		19	11-12	M	Normal	Livingston	.82	State/National
		24	10	M	Normal	Livingston	.75	State/National
BPO	Beam-Walk	19	9-10	M/F	Normal	Long Beach Isl.	.57	State/National
		39	9-15	M/F	N.I.	Jersey City	.94	State
		19	11-12	M/F	Normal	Long Beach Isl.	.84	State/National
		19	12-13	M/F	Normal	Long Beach Isl.	.61	State/National
		19	9-15	M/F	E.D.	Jersey City	.89	State
		32	8-12	M/F	NI/EMR	Jersey City	.83	State
EHC	Dribbling	19	9-10	M/F	Normal	Long Beach Isl.	.75	State/National
		19	11-12	M/F	Normal	Long Beach Isl.	.89	State/National
		39	9-15	M/F	N.I.	Jersey City	.94	State
		19	12-13	M/F	Normal	Long Beach Isl.	.86	State/National
		22	9	M	Normal	Livingston	.66	State/National
		33	9	F	Normal	Livingston	.70	State/National
		30	10	M	Normal	Livingston	.61	State/National
		25	10	F	Normal	Livingston	.70	State/National
		38	11	M	Normal	Livingston	.73	State/National
		30	11	F	Normal	Livingston	.48	State/National
EHA	Target-throw	19	9-15	M/F	E.D.	Jersey City	.49	State
		39	9-15	M/F	N.I.	Jersey City	.94	State
EFA	Target-kick	19	9-15	M/F	E.D.	Jersey City	.31	State
		39	9-15	M/F	N.I.	Jersey City	.95	State
M.A.I.	Test Battery	19	9-15	M/F	E.D.	Jersey City	.82	
		39	9-15	M/F	N.I.	Jersey City	.86	

Validity: Test Battery validated by a panel of experts.

[1] Symbols: C.H.—communication handicapped, N.I.—Neurologically impaired, E.D.—emotionally disturbed and E.M.R.—educable mentally retarded.

[2] State norms refer to New Jersey.

TABLE 3-2

RELIABILITY AND VALIDITY OF PHYSICAL FITNESS INSTRUMENTS

PHYSICAL FITNESS TEST: LEVEL II

Factor	Item(s)	n	Age(s)	Sex	Student Population	School District	Correlation	Norms Available
Arm Strength	A.H.	30	15	F	Normal	Wall Twp.	.97	State/National
		33	15	M	Normal	Wall Twp.	.89	State/National
		19	7	F	Normal	Twp. of Ocean	.88	Local/State/ National
		13	6	M	Normal	Paramus	.97	State/National
Abdominal Strength	S.U.	30	15	F	Normal	Wall Twp.	.99	State/National
		33	15	M	Normal	Wall Twp.	.90	State/National
		19	7	F	Normal	Twp. of Ocean	.89	Local/State/ National
Explosive Power, Legs	B.J.	30	15	F	Normal	Wall Twp.	.95	State/National
		33	15	M	Normal	Wall Twp.	.98	State/National
		13	6	M	Normal	Paramus	.49	State/National
		19	7	F	Normal	Twp. of Ocean	.89	Local/State/ National
Endurance	200 yd.	19	7	F	Normal	Twp. of Ocean	.91	Local/State/ National
		13	6	M	Normal	Paramus	.76	State/National
8 min.		50	12-13	M/F	Normal	Twp. of Ocean	.86	Local/State/ National
12 min.		90	14-17	M/F	Normal	Twp. of Ocean	.80	Local/State/ National
PFI	Battery	13	6	M	Normal	Paramus	.70	–
		19	7	F	Normal	Twp. of Ocean	.91	–
		25	11-13	M/F	N.I.	Jersey City	.99	–
		19	7	F	Normal	Paramus	.93	–
		34	15	M	Normal	Twp. of Ocean	.94	–
		30	15	F	Normal	Wall Twp.	.95	–
PFI	Validity[1]	17	15	M	Normal	Twp. of Ocean	.87	–

Arm Strength Test
Lincoln School, Bergenfield, N. J.

[1] Validated the Level II instrument by correlating it with the Roger's PFI.

provides a partial basis for diagnosing student needs. The use of one test should be cautioned as providing limited and sometimes erroneous diagnostic information. Further "tests" are viewed as "learning experiences" and are used to involve students maximally in the teaching and learning process. It has been found that students who test themselves and record their own performance scores tend to become intrinsically motivated. Awareness of their relative strengths, weaknesses, and values derived from their prescriptive programs, heightens their desire to improve their performance.

Many different procedures may be used for administering the motor ability and physical fitness tests. Factors influencing which test procedures are adopted include: the number of testers available; the age of the children to be tested; the extent of the handicapping condition(s) of the population to be tested; the teacher-pupil ratio; the time allotted for each instructional period; and, the availability of adequate facilities and supplies. Despite these variables (which contraindicate the establishment of one standard procedure for administering the test batteries), the guidelines presented herewith are of a general nature and can be incorporated in most programs.

Motor ability testing. General guidelines:

1. Prepare and have available composite scoring sheets. (See Appendix A for samples.) Enter students names, mental ages for the handicapped, and other appropriate information.
2. Set-up mini-stations within the testing area for GBC, BPO, EHC, EHA and EFA.
3. Place appropriate supplies and testing equipment at each station.
4. Explain and *demonstrate* each test item *before* requesting students to perform.
5. Have each student *practice* the test item two or three times to ensure that they understand what is requested.

Comment: If the child either achieves the "maximum score" or cannot achieve "any score," the test item is inappropriate and a test item for a different level should be administered. You may thus have to administer two or three instruments in one testing period.

6. Test students in accordance with teacher-pupil ratio.
7. Record performance scores (raw) and anecdotal remarks during the testing period.

Comment: Observe pupil performance and list anecdotally any atypical performance patterns. It is not unusual for a child to achieve a high test score, while simultaneous exhibiting poor motor performance.

8. Convert raw scores to stanine scores and Motor Ability Indexes (after class).

Comment: Be sure to refer to the appropriate norm table. For example, the performance of a mentally retarded child should be determined by referring to the MR norm table that includes his or her *mental age.*

9. Analyze *all* formal and informal information and prepare individual prescriptive programs.

Alternate approach: Secure individual time prescriptions and suggested prescriptive guidelines from the ACTIVE Office. (See Appendices B and C for details.)

Physical fitness testing. General guidelines:[1]

1. Prepare and have available composite score sheets. (See Appendix D for a sample.) Enter student names, mental ages for the handicapped, somatotype classification and other appropriate information.

Comment: The citing of a child's basic body structure will assist the teacher in the assessment and prescriptive phases of the process. For example, the extreme endomorph (pear-shaped, obese individual) should have an aspirational level and program established commensurate with his physical potential.

2. Explain and *demonstrate* each test item *before* requesting students to perform.
3. Have each student *practice* the test item two or three times to ensure that they understand what is requested.

Comment: The standing broad jump provides the classic example since it demands coordination of the total body. Without practice, test performance may be contaminated by the fact that the individual cannot put forth a maximum effort and the result could well be a spurious measurement of explosive leg power.

4. Test students in accordance with teacher-pupil ratio.

Comment: Where appropriate, pair students and have one perform and the other record performance scores.

5. Record performance scores (raw) and anecdotal remarks during the test period(s).
6. Convert raw scores to stanine and Physical Fitness Indexes for the Level II Instrument.

Comment: No norms are established for the Level I Instrument because of its criterion-referenced structure.

7. Analyze *all* formal and informal information and prepare individual prescriptive programs.

Alternate approach: Secure individual time prescriptions and suggested prescriptive activities from the ACTIVE Office.

Some Important Considerations

"That which is worth testing is worth testing properly" is a true adage. Observance of testing programs and a review of data submitted to the ACTIVE Office indicate that insufficient consideration has been generally accord-

[1] **Note:** Comments relative to motor ability testing, are applicable, although not cited in this section.

ed to testing and recording of data. If performed inappropriately, the entire diagnostic-prescriptive-evaluative process becomes meaningless. Implementation of the following considerations will minimize subsequent problems. (The considerations are especially important for conducting a research study.)

1. Pre- and post-test students under similar conditions.
   Rationale: To minimize potential error due to different environmental conditions.
2. Ensure testing consistency by following precisely the ACTIVE test directions and using only *carefully trained* administrators or teachers. (If conducting a study, it is advisable to have teachers test each other's class(es) to minimize bias.)
3. Be thoroughly familiar with the scoring procedure. Before testing, review all scoring forms and appropriate tables.
   Rationale: To ensure accuracy in the recording of raw scores, percentiles, stanine scores and MAI or PFI scores.
4. Record performance scores and all other appropriate information on the appropriate ACTIVE form. Carefully proofread to eliminate errors. (Teachers conducting a research study may desire to use the data recording format (Table 3-3) included in a monograph published by the US Department of Health, Education and Welfare.[1])

TABLE 3–3
RESEARCH STUDY DATA RECORDING FORM

School_____ Sheet _____ of _____

Class/Group_____ Recorder _____

Treatment/Comparison_____ Date _____

Tests:	Pre-test	Post-test
Name		
Level		
Form		

Student Names:	ID NO.				DATE		RAW SCORE		STAND. SCORE	
	Cd	Grp	Sx	Ind.	Pre	Post	Pre	Post	Pre	Post
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										
11.										
12.										
13.										
14.										

Symbols: Cd—one-digit experimental number; Grp—two-digit group or class identification; Sx—one-digit sex code; and Ind—two-digit student number.

[1] Office of Education, *A Practical Guide to Measuring Project Impact on Student Achievement*, 1975, p. 81.

CHAPTER IV

ANALYSES OF NORMS BASED ON CHRONOLOGICAL AND MENTAL AGES: SOME OBSERVATIONS AND RECOMMENDATIONS

During the past three years, the ACTIVE Office has gathered and analyzed pupil data for school districts and agencies throughout the country. It has also prepared local norms upon request. A service it could not provide was the establishment of local norms for mentally retarded (MR), learning disabled (LD) and emotionally disturbed (ED) students, because of the limited number of individuals within a school district exhibiting the handicapping conditions and the extreme discrepancies between the chronological and mental ages of those involved (e.g., some individuals in institutions and agencies are 50-60 years of age chronologically, yet possess mental ages that range from 2-5 years).

CAUSE OF CONCERN

How should norms be established for MR, LD and ED individuals? Should they be based on chronological or mental ages? Or, should the norms vary—possibly using mental age for MR's and chronological age for LD's and ED's? These questions were pondered because the author maintains:

1. The performance of any task requires comprehension on the part of the learner.
2. MR subjects frequently cannot perform a task because they do not understand what is requested.
3. LD and ED subjects may have similar difficulty in interpreting what is requested because of perceptual and/or social dysfunction.
4. Mental age is a more appropriate indicator of task performance than chronological age.

A REVIEW OF THE LITERATURE

Blair maintains "Norms should be established according to mental age for the mentally retarded child in motor activities."[1] A synthesis of her findings and other research studies conducted from 1948 through 1971 revealed:

- The mean scores for both mentally retarded boys and girls were from two to four years below chronological age level norms.
- Differences between performances of normal and mentally retarded children increased as youngsters grew older.
- Differences were greatest for tasks that were complex in nature.[2]
- Mentally retarded youngsters were two to four years behind their normal colleagues in all motor activities tested.
- Trends in strength for mentally retarded subjects for each sex followed the same patterns as those in normal children, although at a lower level at every age.
- Discrepancies between mentally retarded and normal children tended to increase at each successive age level; with complex skills, discrepancies increased even more with increased age.[3]
- Educable mentally retarded children and normal children of similar chronological ages differed significantly in simple motor tasks.
- No significant differences were observed between mentally retarded children and normal children of the same mental age.[4]
- No significant differences were shown between MR and normal subjects of comparable mental ages.[5]
- Normal children were found to be superior to the mentally retarded group in mean achievement on all eight selected motor skill items.[6]

---

[1] Mary Jo Blair, "Issue in Measurement: Norms," Graduate Paper Submitted, New York University, New York, 1975, p. 1.

[2] David K. Brace, "Motor Learning of Feeble Minded Girls," December, 1948, pp. 269-275.

[3] R.J. Francis and G.L. Rarick, "Motor Characteristics of the Mentally Retarded," 1959.

[4] James Duane Beaber, "The Performance of Educable Mentally Handicapped and Intellectually Normal Children on Selected Tasks Involving Simple Motor Performance, 1960.

[5] H.W. Stevenson, "Learning of Complex Tasks by Normal and Retarded Subjects, 1960, pp. 1021-1026.

[6] Thelma G. Thurstone, "An Evaluation of Educating Mentally Handicapped Children in Special Classes and in Regular Classes." January 16, 1961.

- Children with low IQ's (average 83) perform less skillfully than individuals of normal intelligence.[1]
- There is a positive relationship between intelligence and performance of learning tasks.[2]
- A high correlation between motor ability and IQ exists.
- MR children tend to function physically at their mental age.[3]
- MR children grouped according to mental age were significantly superior to normal children in motor performance.
- The normal group was superior to the mentally retarded-chronological age group.[4]
- MR boys and girls who performed at all age levels were substantially retarded in mean performances on all test items in comparison with children of normal intelligence.[5]
- MR children of both sexes were two to four years behind performance levels of normal children of the same chronological age.[6]

Londeree and Johnson compared the motor fitness of trainable mentally retarded, educable mentally retarded and normal children.[7] Their findings:

- The TMR's exhibited considerable impairment on all motor variables.
- The degree of impairment suggested a curvilinear relationship between intelligence and skill proficiency.

The researchers indicated that possible explanations for reduced motor ability of the TMR children included:

- Intellectual complexity of the motor acts.
- Generalized genetic and/or environmental impairment.
- Lack of curicular attention to basic physical fitness needs of TMR's.

(**Note**: The Londeree-Johnson study compared subjects on the basis of chronological age.)

The writer conducted a research study on behalf of the Jersey City School district.[8] One aspect of the study involved a correlational matrix to ascertain the relationships between the chronological and mental ages of neurologically-impaired and emotionally disturbed males and females and their component and composite motor performance scores. While the correlations were low and in many instances negative, it is interesting to note that in all 24 comparisons the mental age-test item relationship was more positive than the chronological age-test item relationship. Table 4-1 details the interrelationships.

While obviously neither chronological age (CA) nor mental age (MA) provides a sound basis for establishing norms for MR, LD and ED populations, the review of the literature warrants further investigation of the chronological age—mental age conflict. Should other investigations substantiate the previous findings, then norms for the handicapped should be based on mental ages. This "norming" procedure could well serve as a viable interim step for meeting the needs of mentally retarded, learning disabled and emotionally disturbed children.

SOME OBSERVATIONS

To investigate the CA-MA interrelationships, the ACTIVE Office collected motor ability and physical fitness data for normal, MR, LD and ED children in New Jersey during 1974-76. When submitting pre-post data, teachers were requested to include chronological age, sex, handicapping condition (if not normal) and IQ and mental age for the handicapped population. The data were clustered and "normed" in four groups:

1. Normal—based on CA.
2. Mentally retarded (EMR, TMR and severely profoundly retarded)—based on MA and CA.
3. Learning disabled (neurologically and perceptually impaired)—based on MA and CA.
4. Emotionally disturbed—based on MA and CA.

(Districts were also requested to submit the names of the instruments used to determine MA's and IQ's.)

ANALYSES OF DEVELOPMENTAL CURVES

To illustrate pictorially the relationships among the four groups and two variables (MA and CA), the median scores based on chronological ages for each population were plotted on separate graphs (solid lines). Superimposed on the MR, LD and ED graphs were median scores based on mental ages (a series of dashes). The resulting curves may be considered **developmental** curves because they reflect changes in motor and physical proficiency for each component from childhood through adolescence.

---

[1] Erling Amussen and K. Heeboll-Nielson, "Physical Performance and Growth in Children: Influence of Sex, Age, and Intelligence," January 1956.

[2] N.L. Malpass Carrier and K. Orton, "Response to Learning Tasks of Bright, Normal, and Retarded Children," 1961.

[3] Carol H. Doorn, "Motor Proficiency of Mentally Retarded Children," Doctoral dissertation, University of Georgia, 1971.

[4] Jack D. Hollingsworth, "A Comparison of Motor Ability of Mentally Retarded Children of Specific Mental and Chronological Ages and Normal Children." Doctoral dissertation, University of Georgia, 1971.

[5] James H. Widdop, "The Motor Performance of Educable Mentally Retarded Children with Particular Reference to the Identification of Factors Associated with Individual Differences in Performance," Doctoral dissertation, University of Wisconsin, 1967.

[6] G. Lawrence Rarick, James H. Widdop and Geoffrey D. Broadhead, "The Motor Performance and Physical Fitness of Educable Mentally Retarded Children," University of Wisconsin, 1967.

[7] Ben R. Londeree and Leon E. Johnson, "Motor Fitness of TMR Vs. EMR and Normal Children," 1974.

[8] Thomas M. Vodola, "The Effects of an Individualized-personalized Physical Activity Program on the Motor/Physical Fitness Performance of Neurologically-impaired Children in the Jersey City School District," Jersey City Public Schools, Jersey City, New Jersey, 1976.

TABLE 4–1

CORRELATION MATRIX; MOTOR PERFORMANCE, CHRONOLOGICAL AGE AND MENTAL AGE

Study No. 1	N=32		Sex: M/F		Handicap: NI/ED		Instrument:		Motor Ability:		Level II	
	MAI		GBC		BPO		EHC		EHA		EFA	
	Pre	Post	Pre	Post	pre	Post	Pre	Post	Pre	Post	Pre	Post
C.A.	–.36	–.09	–.31	.02	–.44	–.08	–.20	.16	.25	.50	–.03	.08
M.A.	–.09	.05	–.04	.08	–.26	–.09	–.02	.29	.28	.51	..18	.30
Study No. 2	**N=73**		**Sex: M/F**		**Handicap: NI/ED**		**Instrument:**		**Motor Ability:**		**Level III**	
C.A.	.02	.06	.08	.02	–.18	–.26	–.23	–.20	–.20	–.04	–.24	–.16
M.A.	.16	.17	.25	.16	–.06	–.12	–.15	–.13	–.10	.09	–.14	–.06

Other correlational studies involving MR and LD individuals revealed similar and more conclusive evidence. Table 4-2 includes additional coefficients of correlation based on data submitted to the ACTIVE Office during the 1976-77 school year.

TABLE 4-2

INTERCORRELATIONS: MOTOR ABILITY, PHYSICAL FITNESS, MENTAL AGE AND CHRONOLOGICAL AGE

Test Item	School[1] District	Age Grouping	n	Sex	Handicapping Condition	Correlations: Mental Age Pre	Mental Age Post	Chronological Age Pre	Chronological Age Post
M.A. Level II									
GBC	Wall Twp.	12-17	15	M/F	TMR	.30		.30	
BPO	A.I.M.S.[2]	10-16	15	M/F	EMR	.24	.46	.23	.32
EHC	A.I.M.S.	10-16	15	M/F	EMR	.30	.42	.26	.09
EHA	Wall Twp.	12-17	16	M/F	TMR	.15		.25	
EFA	Nutley	14-20	15	M	TMR	.11		.05	
M.A.I.	New Lisbon	14-22	13	M	SPR[3]	.04	.01	.002	.06
M.A. Level III									
GBC	S.O.–Maplewood	8-13	15	M/F	EMR	.11	.20	.10	.18
BPO	Old Bridge	10-14	15	M/F	EMR/LD	.11	.03	- .27	–.15
EHC	Old Bridge	13-20	15	M/F	TMR	–.17	–.19	–.16	–.10
EHA	Old Bridge	13-20	15	M/F	TMR	.24	.27	.18	.10
EFA	S.O.–Maplewood	8-13	15	M/F	EMR	.11	.08	.08	.08
M.A.I.	Old Bridge	10-14	15	M/F	EMR/LD	.01	.05	–.27	.005
P.F. Level II									
Arm Hang	Lebanon Twp.	6-12	12	M/F	LD	.75		.71	
Sit-ups	Lebanon Twp.	6-12	12	M/F	LD	.28		.29	
Broad Jump	Hampton	10-14	15	M/F	EMR	.07	.06	.07	.06
Endurance[4]	New Lisbon	14-22	15	M	SPR	–.37	–.47	.11	.23
P.F.I.	New Lisbon	14-22	15	M	SPR	.20	.10	.10	.11

[1] All school districts are in New Jersey.

[2] A.I.M.S.–American Institute of Mental Studies.

[3] SPR–Severely and/or profoundly retarded.

[4] Increase in negative correlation is indicative of a more positive relationship.

Motor Ability Performance, Level II Males

Figure 4-1 provides the male developmental curves for the Motor Ability Instrument: Level II. Close observation reveals that the curves for the MR population, based on MA's, closely parallel the curves for the normal males. (In fact, superiority was evidenced in terms of EHA and EFA.) The MA and CA curves for the LD males closely parallel one another. The ED curve based on mental age resembles the normal curve, particularly for the EHC, EHA, and EFA components. (See pages 38–39 for Fig 4-1.)

Motor Ability Performance, Level II Females

The developmental curves for females in Figure 4-2 are consistent with the curves for their male counterparts. The graphs indicate: (pp. 40–41)

- .The MA scores for the mentally retarded population are higher than their CA scores.
- .The MA scores for the MR population very closely approximate the CA scores of the normal population.
- .The MA and CA scores of the LD and ED populations closely parallel one another and are comparable to the scores of the normal population.

Motor Ability Performance, Level III Males

The Level III instrument, administered to students who exhibit superior motor ability, indicates: (pp. 42–43)

- .Consistent and comparable developmental patterns for all four groups.
- .MA scores of MR students are consistently higher than their CA scores for ages 8-9, with comparable scores thereafter.
- .MA scores are equal to, or higher than, the CA scores for LD and ED males. Clear superiority was noted for:
  - –LD's: BPO and EHC
  - –ED's: GBC

Motor Ability Performance, Level III Females

Female performance on the Level III test reflects: (pp. 44–45)

- .MR population–MA scores superior to CA scores for GBC, BPO, EHA and EFA; EHC scores were slightly lower.
- .LD population–MA scores comparable, or superior to, CA scores for GBC, BPO, EHA and EFA; EHC scores were slightly lower.
- .ED population–MA scores comparable to or higher than, CA scores for GBC, BPO, EHA and EFA; EHC scores were slightly lower.

General Observation: The MA scores for all three handicapped populations were less than their CA scores on the Ball-Bouncing test (EHC).

Physical Fitness Proficiency, Level II Males

Figure 4-5 illustrates male developmental physical fitness patterns for normal students, ages 5-17, and comparable patterns for MR, LD and ED students, ages 5-11. Specific patterns exhibited include: (pp. 46–47)

- .Normal population–A gradual improvement in physical proficiency for ages 5-13, followed by some regression patterns in the teen years (except for Explosive Leg Power ELP).
- .MR population–Distinct superiority for MA scores, except for Endurance (E), ages 9-11.
- .LD population–General superiority for MA scores, except for ELP and E, ages 10-11.
- .ED population–Comparable MA and CA curves, with higher MA scores for Abdominal Strength (Ab.S.) and ELP.

Physical Fitness Proficiency, Level II Females

The developmental patterns for girls are listed in Figure 4-6. Observation reveals: (pp. 48–49)

- .Normal population–An improvement in overall proficiency through age 12, with a tendency to plateau or retrogress thereafter. (This pattern is consistent with other naturally "normed" instruments, i.e., the "peaking" and diminution of physical proficiency scores in the teen years).
- .MR population–Higher MA scores on all four components.
- .LD population–Comparable MA scores in terms of Arm and Shoulder Strength (AS) and AbS and higher ELP and E scores (except for E, age 10).
- .ED population–MA scores were not plotted because of insufficient data. CA scores were plotted to provide for comparisons with the normal population.

ANALYSES OF COMPARATIVE DATA

The previous graphs provided some insight into the relationships between developmental curves plotted for normal individuals, based on chronological ages, and the curves plotted for handicapped students, based on chronological and mental ages. To clarify the relationships further, subsequent graphs compare the performance of the handicapped population on each motor ability and physical fitness factor to the norms of normal students.

The procedure involved:

1. Establishing percentile norms for normal students based on chronological ages. The 50th percentile lines represents the median for New Jersey students for each of the following factors:
   - Motor Ability
     - –GBC: gross body coordination
     - –BPO: balance-postural orientation
     - –EHC: eye-hand coordination
     - –EHA: eye-hand accuracy
     - –EFA: eye-foot accuracy
   - Physical Fitness
     - –AS: arm and shoulder strength

—AbS: abdominal strength
—ELP: explosive leg power
—E: cardiorespiratory endurance

2. Establishing percentile norms for handicapped students, based on mental and chronological ages. The handicapped population included:
   - MR's—educable mentally retarded, trainable mentally retarded and severely and/or profoundly mentally retarded.
   - LD's—neurologically impaired and perceptually impaired.
   - ED's—emotionally disturbed.
3. Plotting the median scores for the handicapped population, based on chronological ages, represented by a solid line (·_____·).
4. Plotting the median scores for the handicapped population, based on mental ages, represented by a dotted line (·_ _ _ _ _ _ _·).

Comparison of Normal and Mentally Retarded Students

Motor ability instrument, level II. Figure 4-7 provides separate graphs for males and females, ages 4-9. The patterns exhibited indicate: (p. 50)

·MR males:
—chronological age: GBC, BPO, BPO, and EHC scores situated in the lower quartile; EHA and EFA scores generally at or above the median line for normal subjects.
—mental age: GBC, BPO, and EHC scores located between the first and second quartile; EHA and EFA scores situated in close proximity to the third quartile.

·MR females:
—Chronological age: GBC, BPO, and EHC scores patterned after the CA scores for males, but slightly lower; EHA and EFA scores on or slightly below the median line.
—mental age: The pattern for all ages and factors closely parallels the MA performance of the males.

·General observations:
—In all comparisons, male and female, the MA scores for the MR population more closely paralleled the median performance line of normal students than did their CA scores.
—All MA scores tended to regress between the ages of 6-8.

Motor ability instrument, level III. Advanced MR students were administered the Level III instrument. Their performance scores, plotted in the graphs in Figure 4-8, indicated: (p. 51)

·MR male:
—chronological age: an irregular pattern, generally ranging in the bottom quartile (except for GBC).
—mental age: MA scores consistent with, or superior to, CA scores for all factors except GBC.

·MR females:
—chronological age: performance scores comparable to the CA scores for boys for all factors except endurance (which was lower).
—mental age: in all comparisons, performance scores equal to, or superior to, CA scores.

·General observations:
In all comparisons except for GBC-males, the MA scores for the MR population more closely paralleled the median performance line of normal students than did their CA scores.

Physical Fitness Instrument, Level II

Physical Fitness MA-CA proficiency relationships are exhibited in Figure 4-9. (p. 52)

·MR males:
—chronological age: median scores generally in the bottom quartile except for abdominal strength.
—mental age: extreme variance in the MA scores ranging between the lowest and highest quartiles.

·MR females:
—chronological age: no factor score exceeded the 30th percentile (normal population).
—mental age: all performance scores were equal to, or exceeded, the scores based on CA.

·General observations:
—The MA proficiency levels for males and females were equal to, or higher than, the levels based on chronological age.
—The MA median scores for males abdominal strength, males—endurance and females—endurance were comparable to, or exceeded, the median scores for normal students.
—MA endurance scores for both sexes generally regressed with an increase in CA.

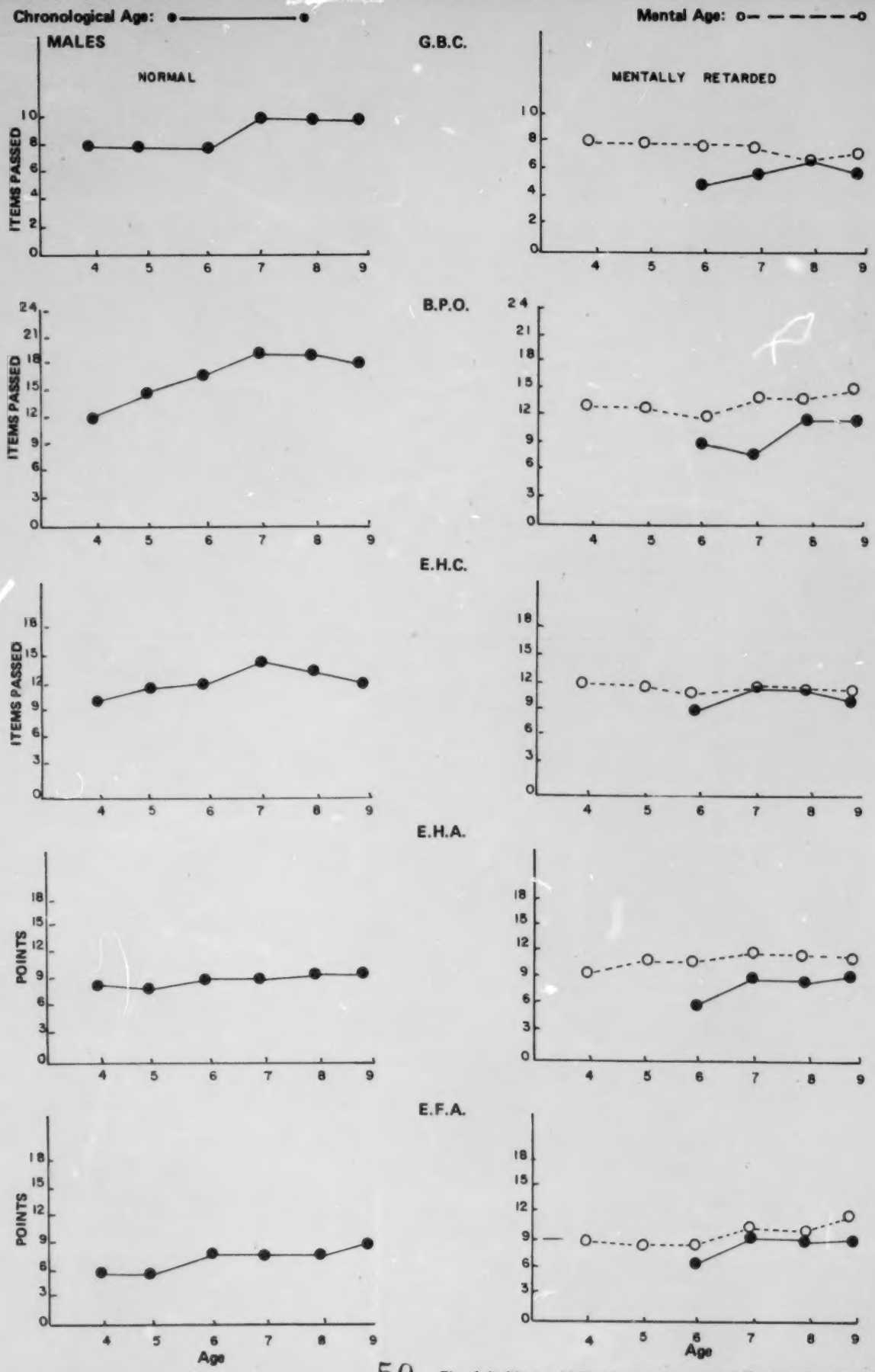
Comparison of Normal and Learning Disabled Students

Motor ability instrument, level II. Figure 4-10 revealed: (p. 53)

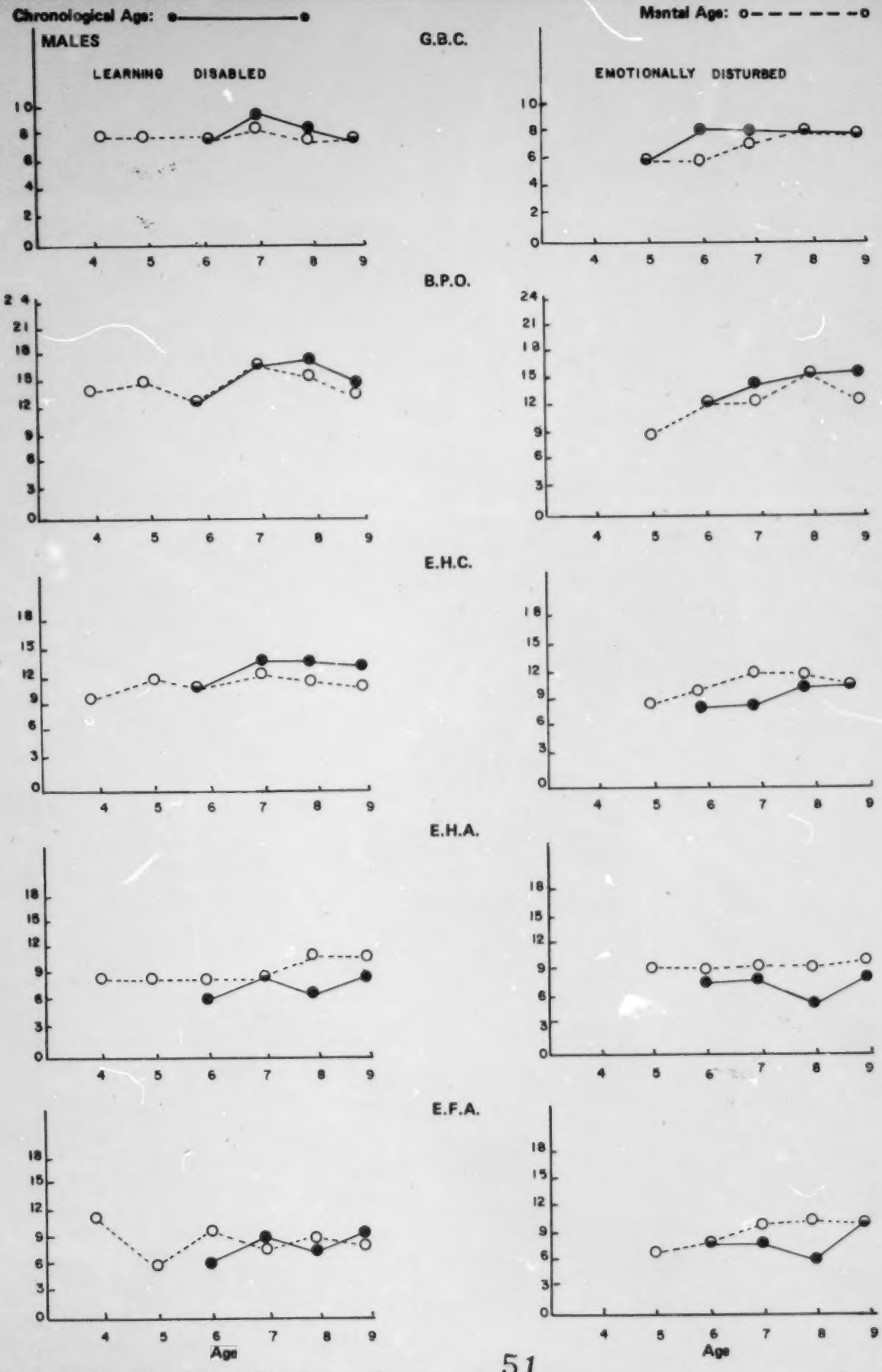
·LD males:
—chronological age: fluctuating pattern, ranging from the 10th—99th percentile.
—mental age: general range, 20th—60th percentile

·LD females:
—chronological age: general range, 35th—80th percentile.
—mental age: closely paralleling the CA scores.

·General observations:
—Male MA scores are slightly closer to the New Jersey median than their counterpart scores.
—No discernable differnece exists between the MA and CA scores for females when compared to the normal population.



50 Fig. 4-1: Motor Ability Instrument Level II: Male Developmental Curves



Based on Chronological Age, Mental Age, and Handicapping Condition

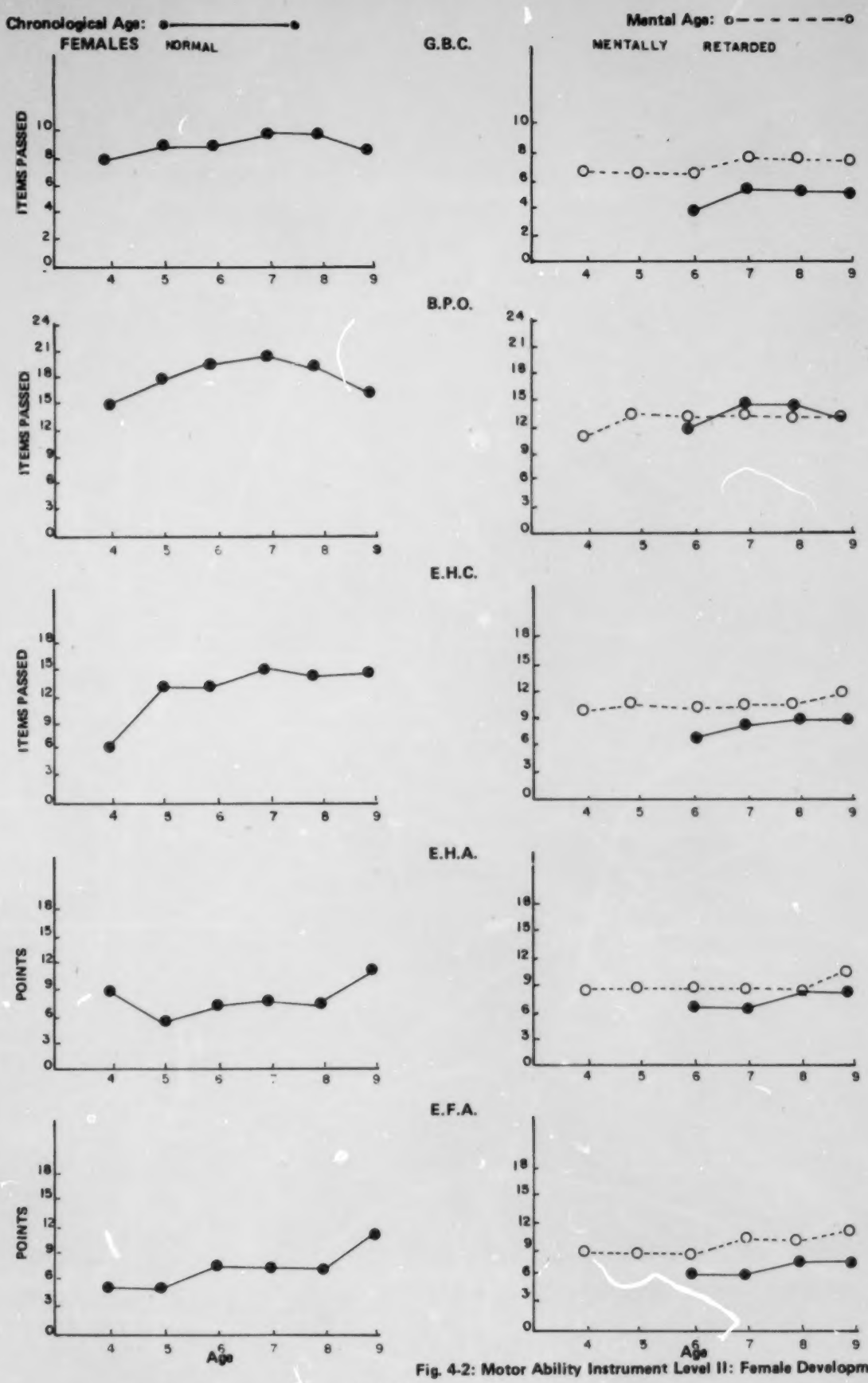
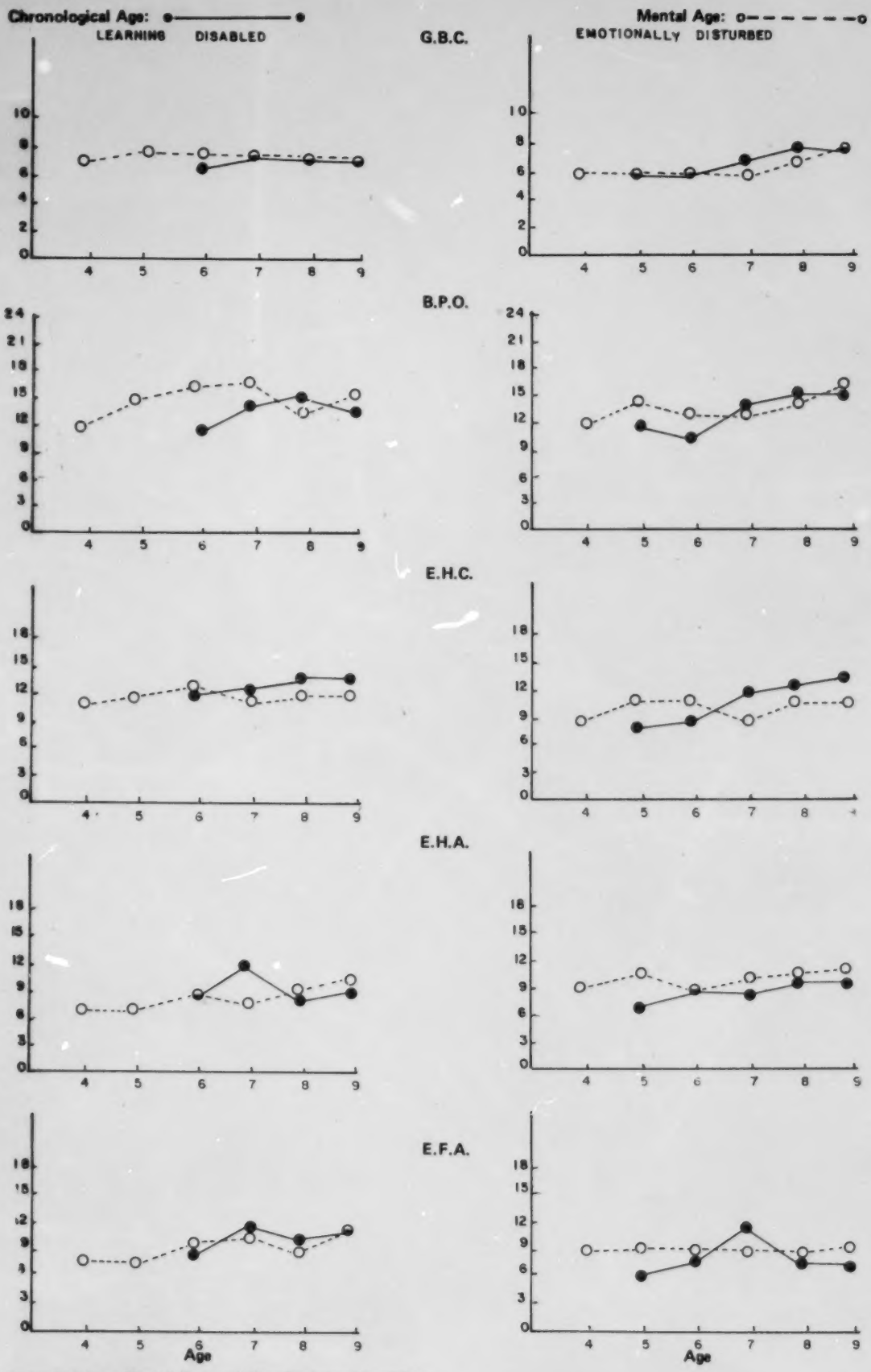


Fig. 4-2: Motor Ability Instrument Level II: Female Developmental Curves



Based on Chronological Age, Mental Age, and Handicapping Condition

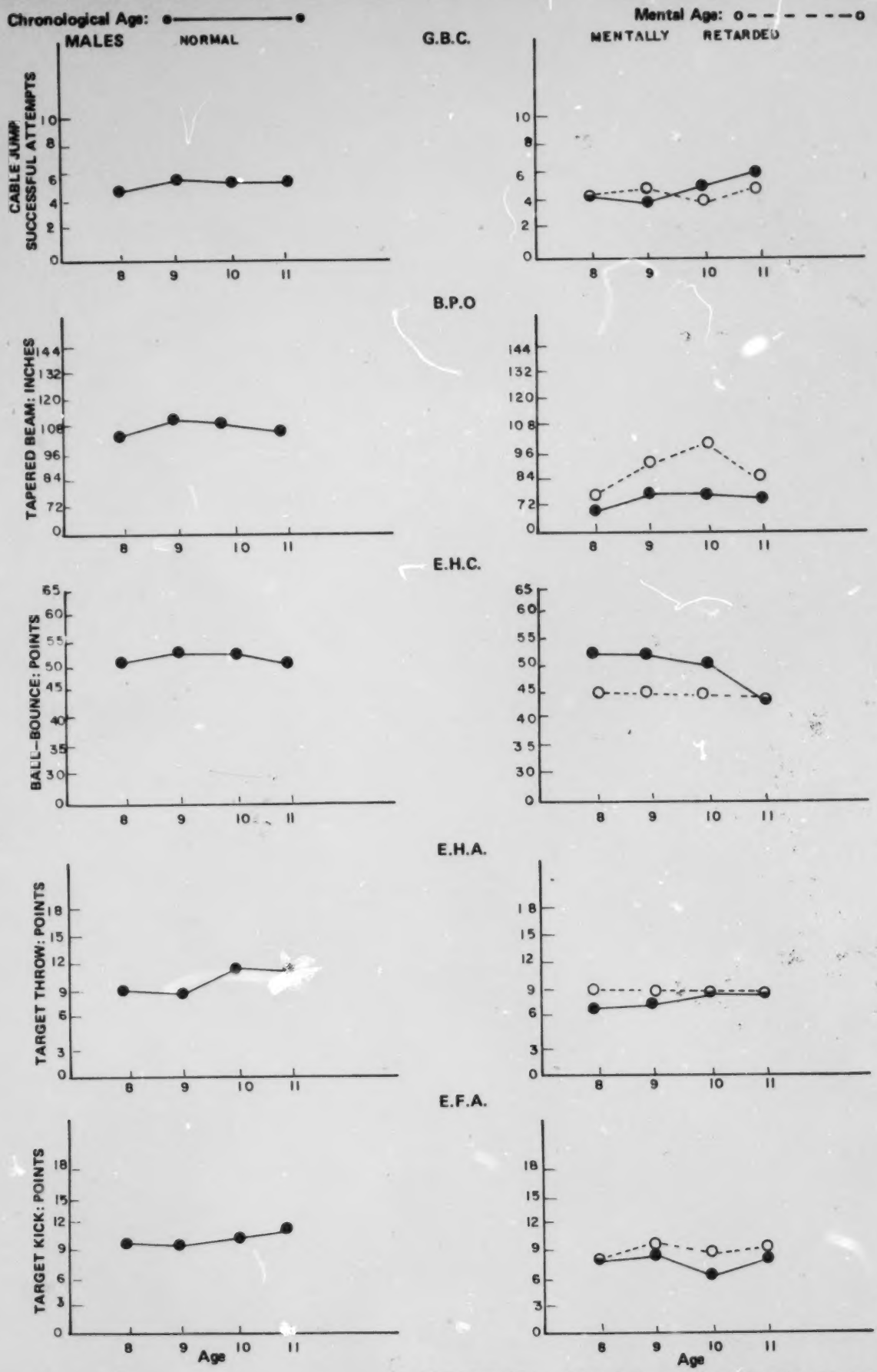
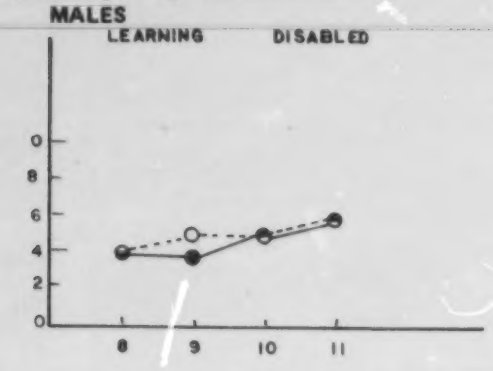


Fig. 4-3: Motor Ability Instrument Level III: Male Developmental Curves

Chronological Age: ●——————● Mental Age: o— - - - - -o

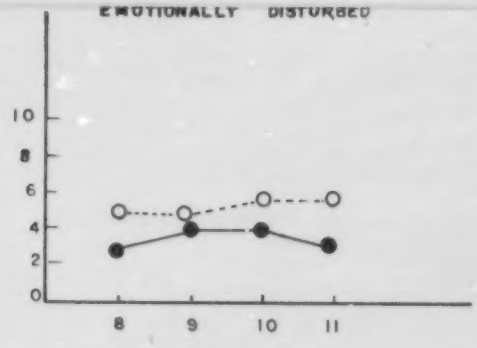
MALES

LEARNING DISABLED

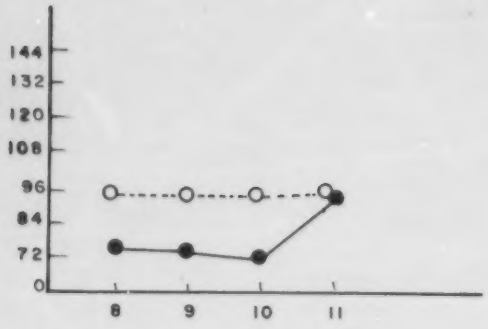


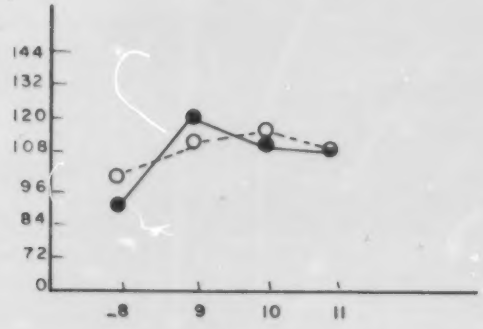
G.B.C.

EMOTIONALLY DISTURBED

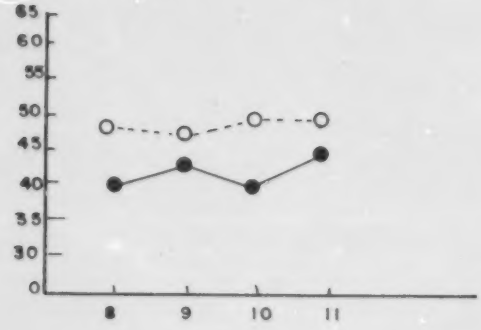


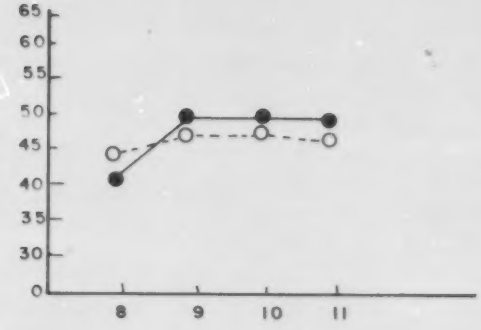
B.P.O.



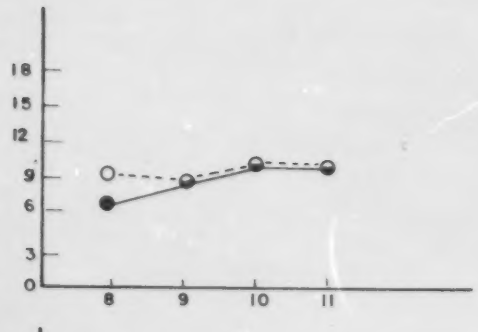


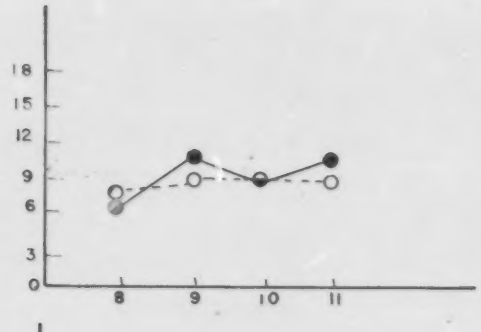
E.H.C.



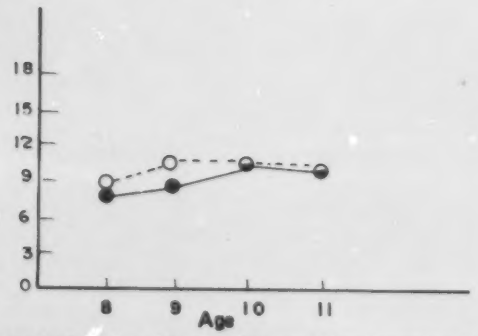


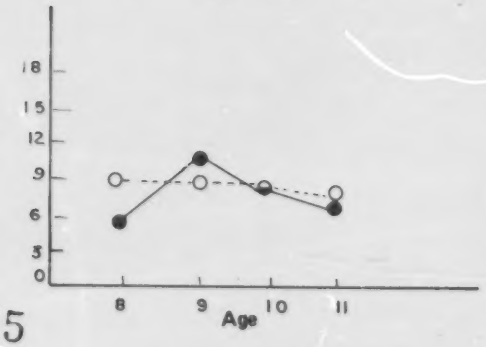
E.H.A.





E.F.A.





Based on Chronological Age, Mental Age, and Handicapping Condition

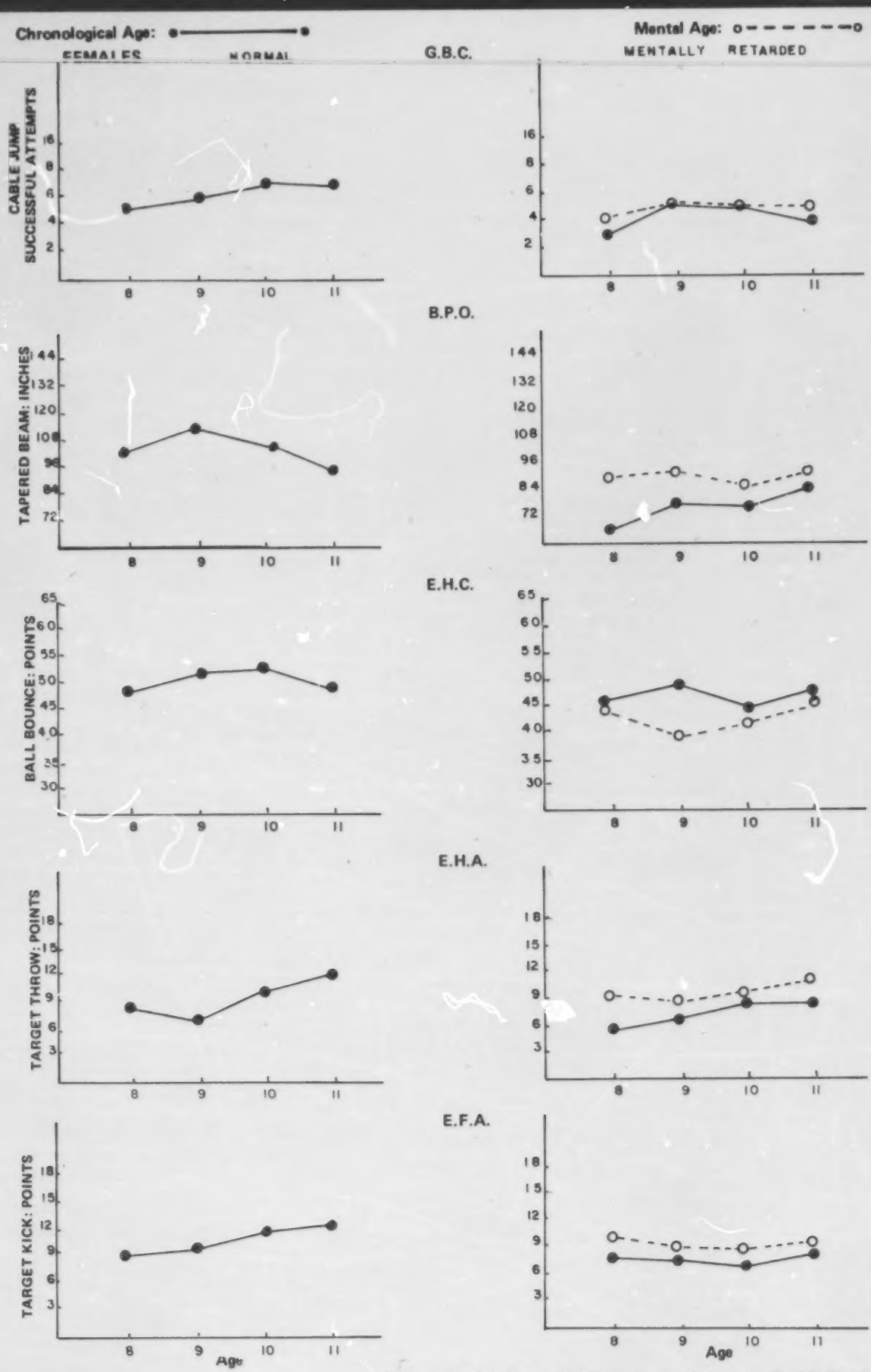
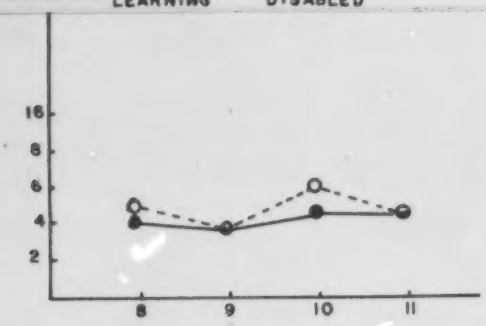
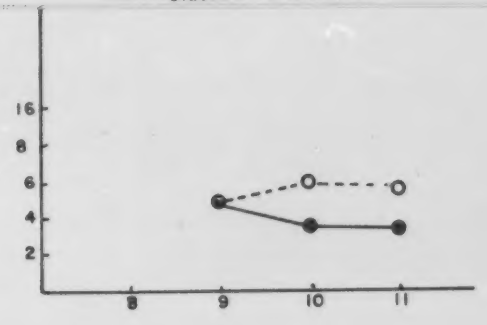


Fig. 4-4: Motor Ability Instrument Level III: Female Development Curves

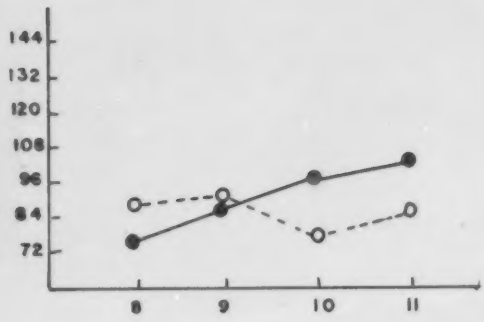
Chronological Age: ●——● Mental Age: o- - - - - -o

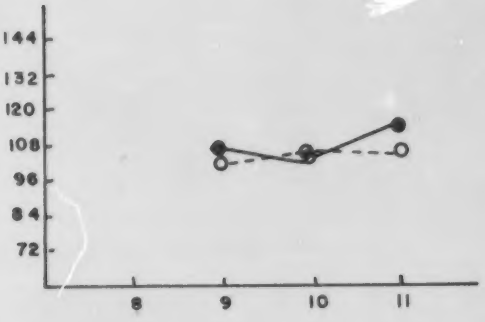
FEMALES LEARNING DISABLED | G.B.C | EMOTIONALLY DISTURBED



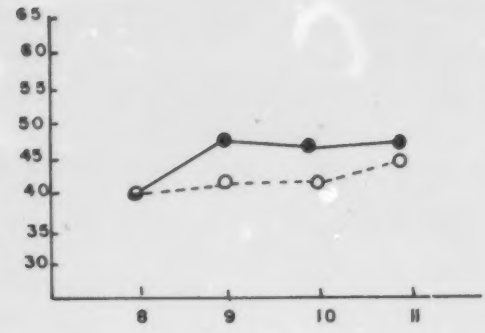


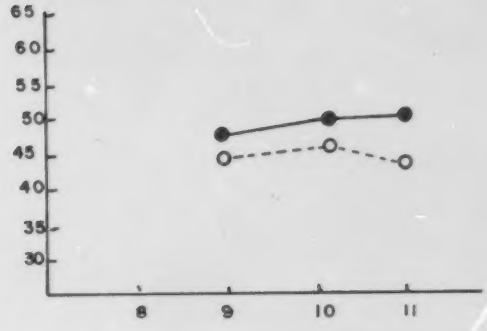
B.P.O



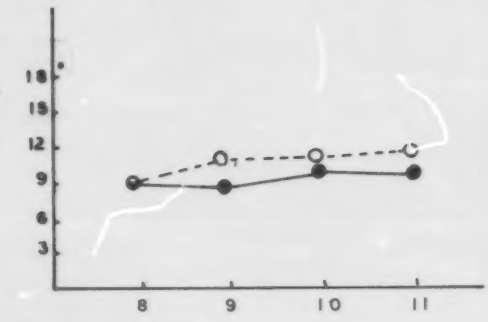


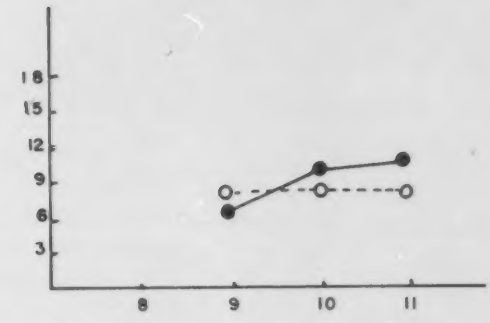
E.H.C.



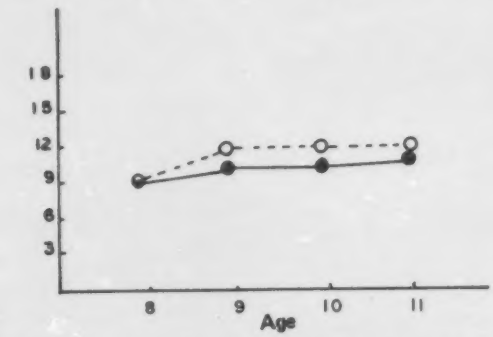


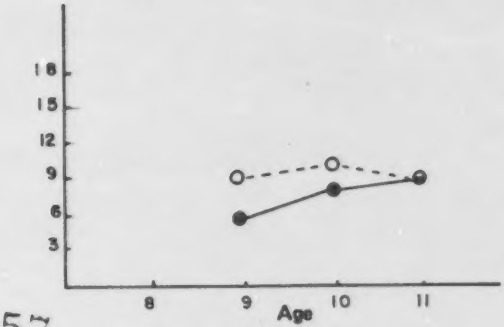
E.H.A.





E.F.A.





Based on Chronological Age, Mental Age, and Handicapping Condition

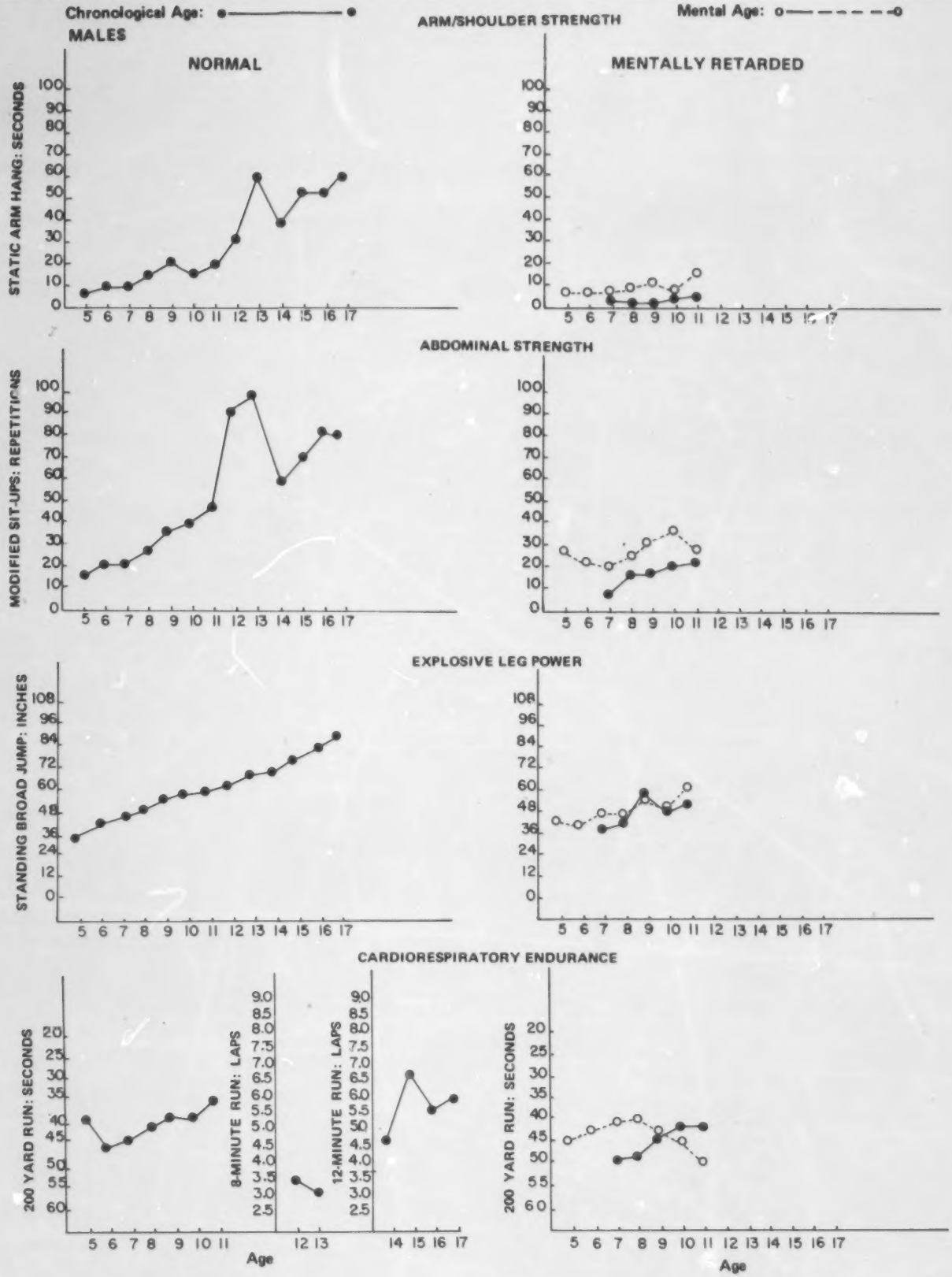
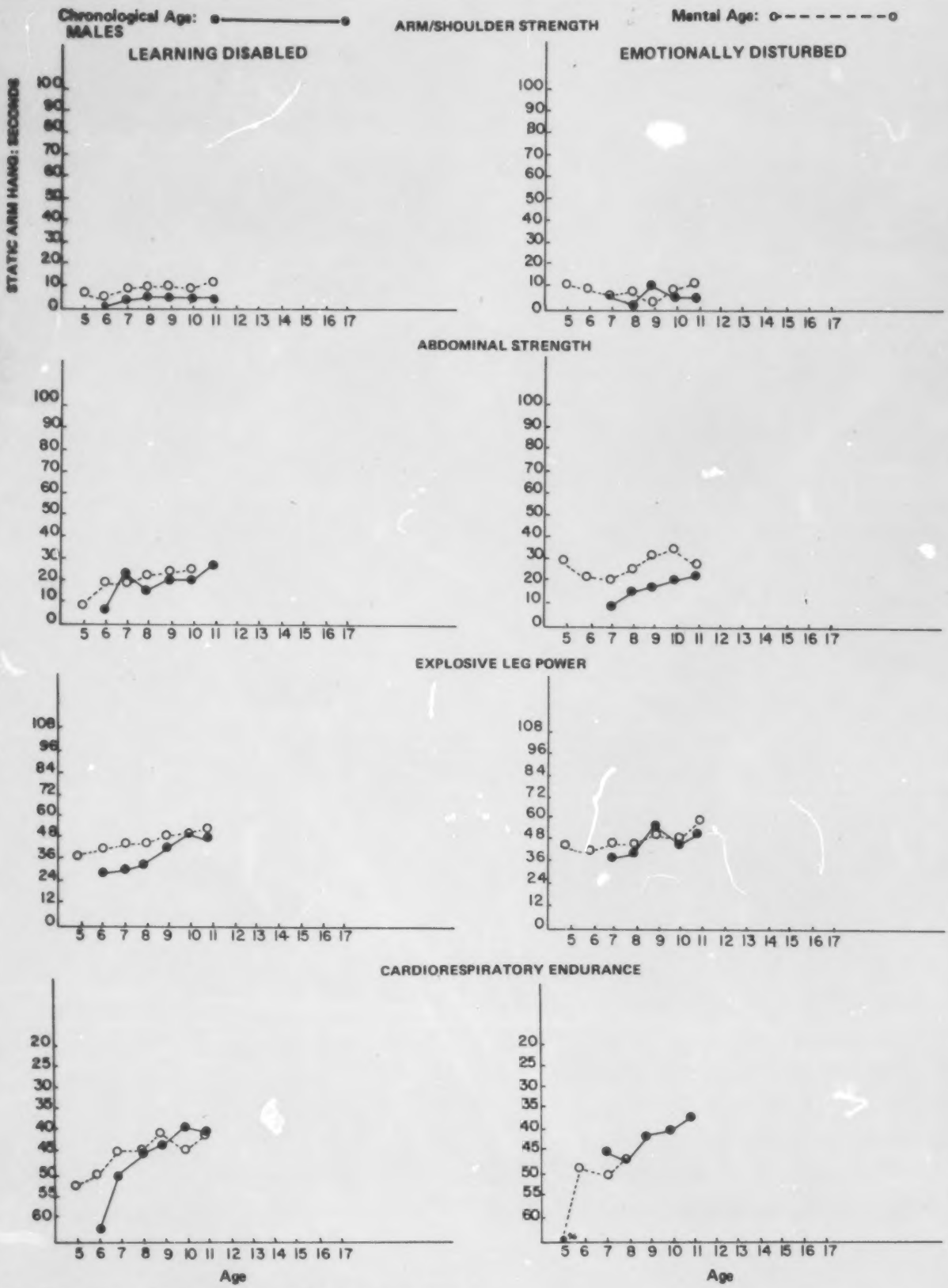
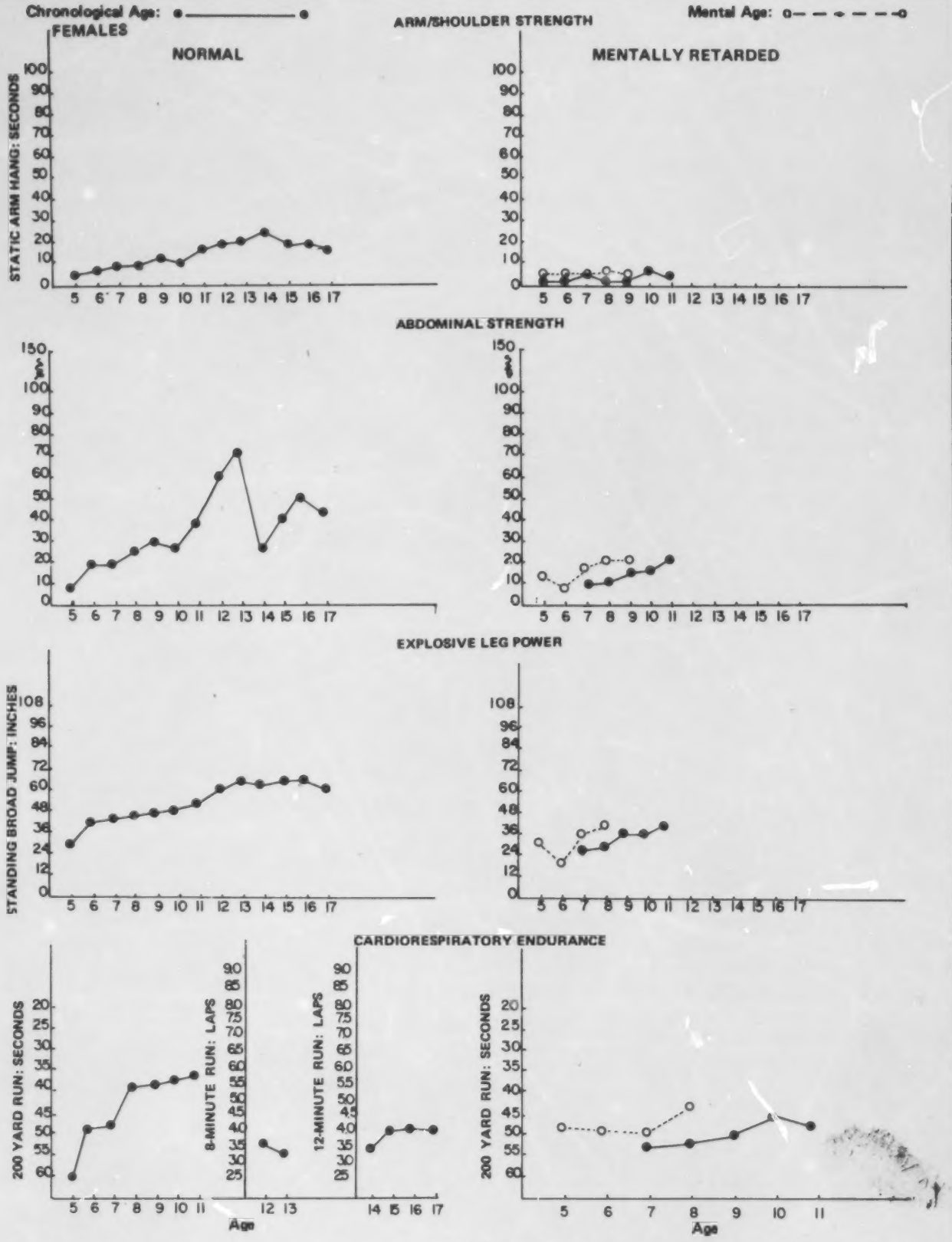


Fig 4-5: Physical Fitness Instrument Level II: Male Developmental Curves



Based on Chronological Age, Mental Age, and Handicapping Condition



48

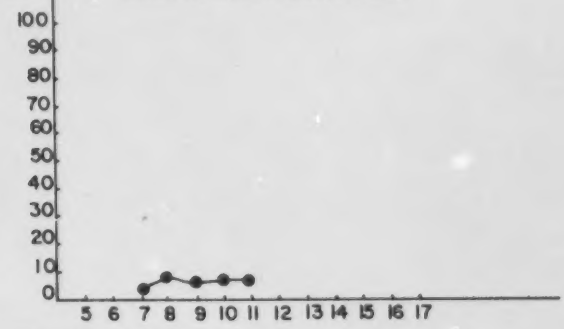
Fig 4-6: Physical Fitness Instrument Level II: Male Developmental Curves

Chronological Age: ●——● Mental Age: o- - -o

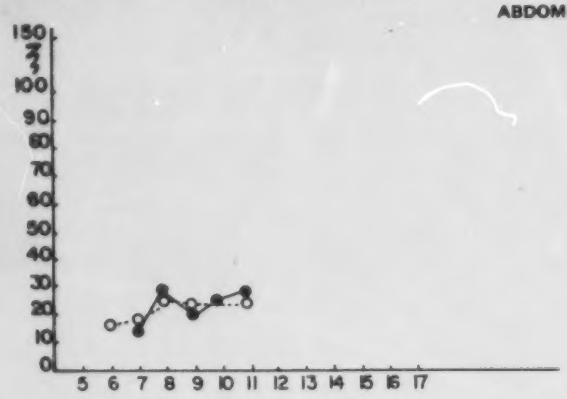
ARM/SHOULDER STRENGTH

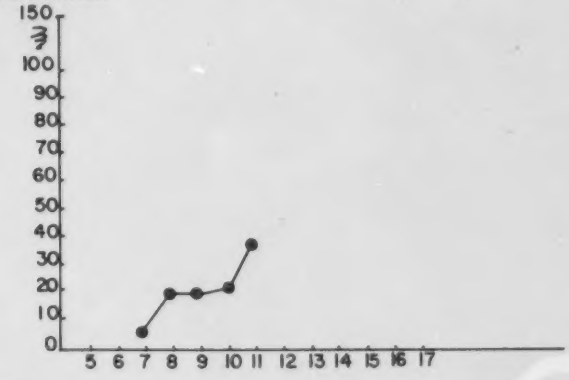
LEARNING DISABLED

EMOTIONALLY DISTURBED

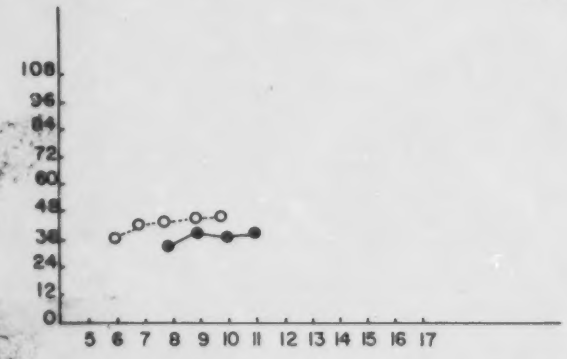


ABDOMINAL STRENGTH

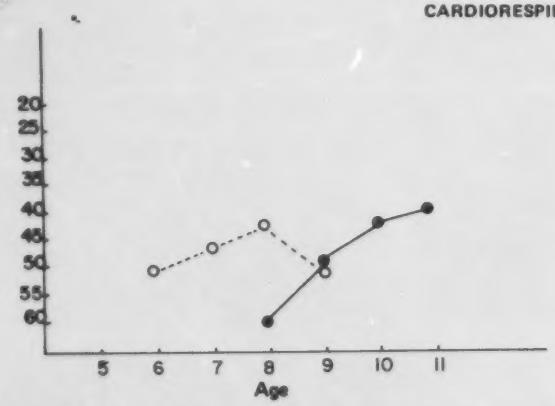


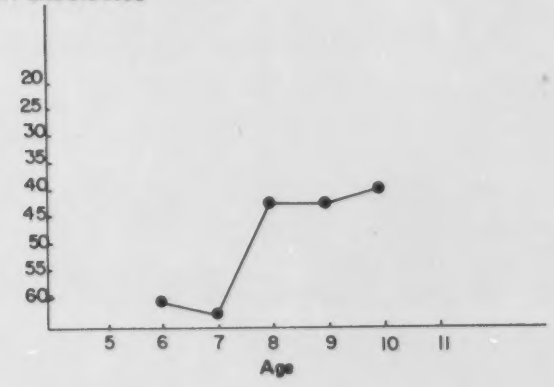


EXPLOSIVE LEG POWER



CARDIORESPIRATORY ENDURANCE





Based on Chronological Age, Mental Age, and Handicapping Condition

MOTOR ABILITY LEVEL II (MR's)

Chronological Age: ●——————●

Mental Age: o - - - - - - - -o

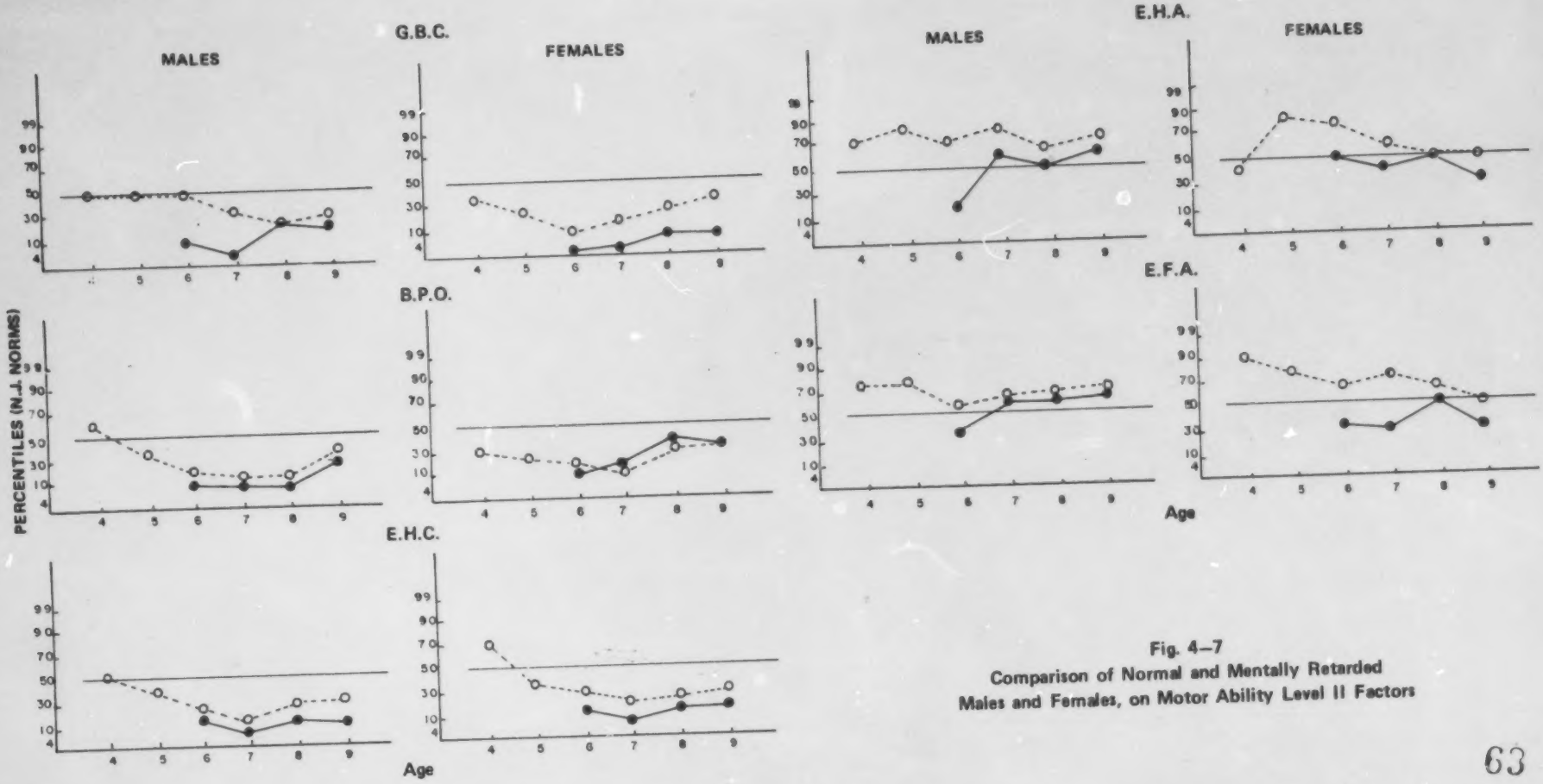


Fig. 4–7
Comparison of Normal and Mentally Retarded
Males and Females, on Motor Ability Level II Factors

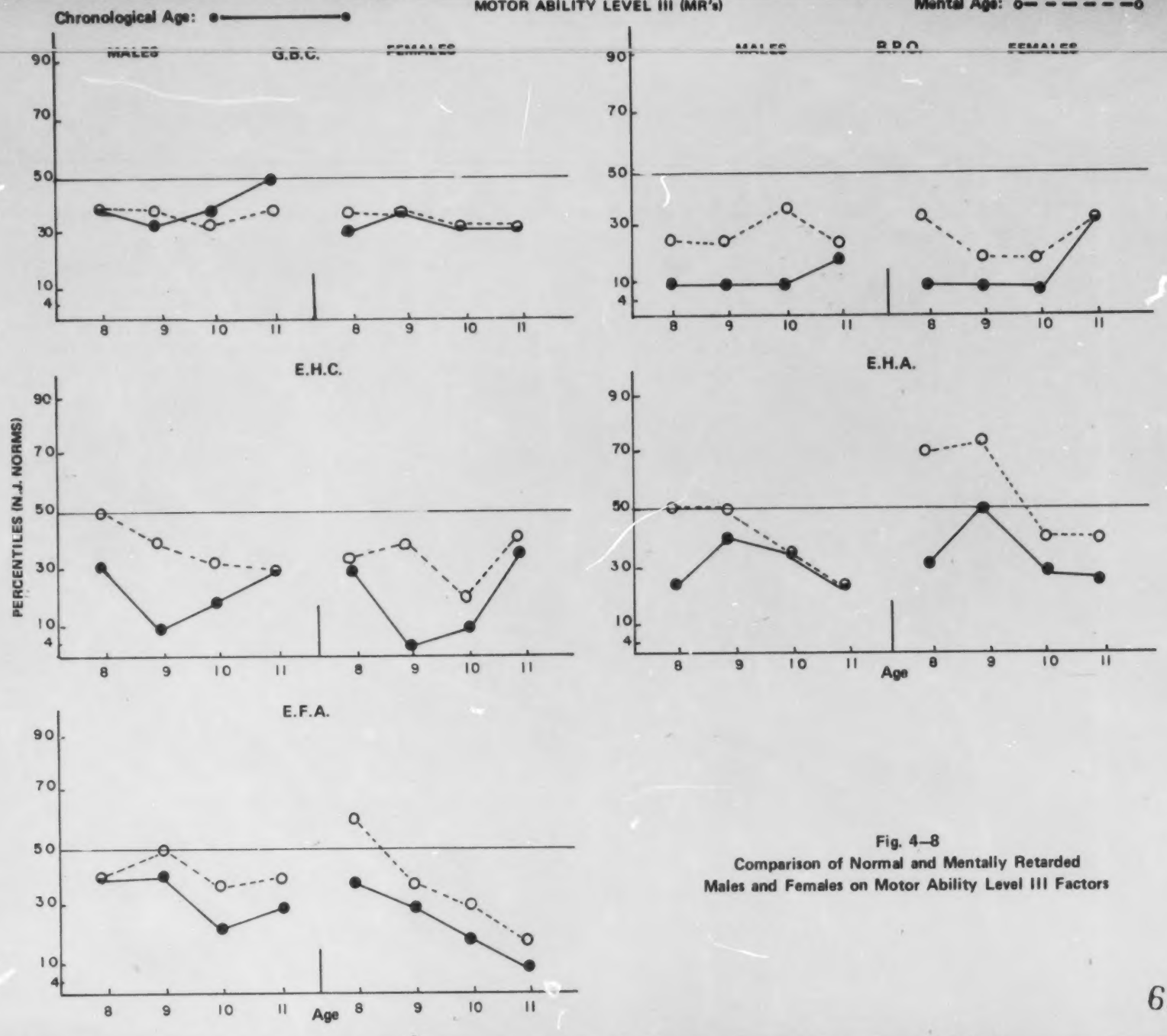


Fig. 4–8
Comparison of Normal and Mentally Retarded
Males and Females on Motor Ability Level III Factors

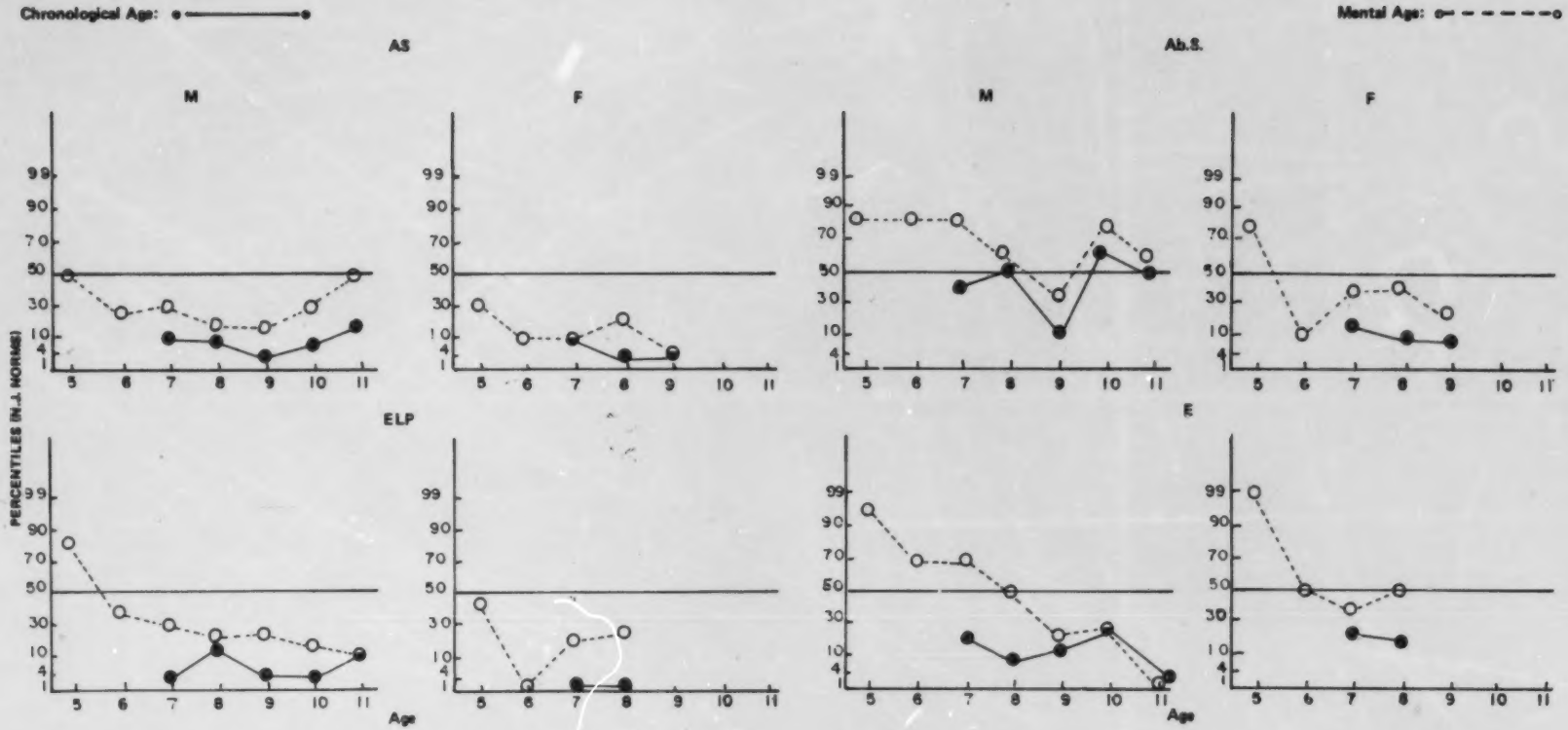


Fig. 4–9
Comparison of Normal and Mentally Retarded Males and Females on Physical Fitness Level II Factors

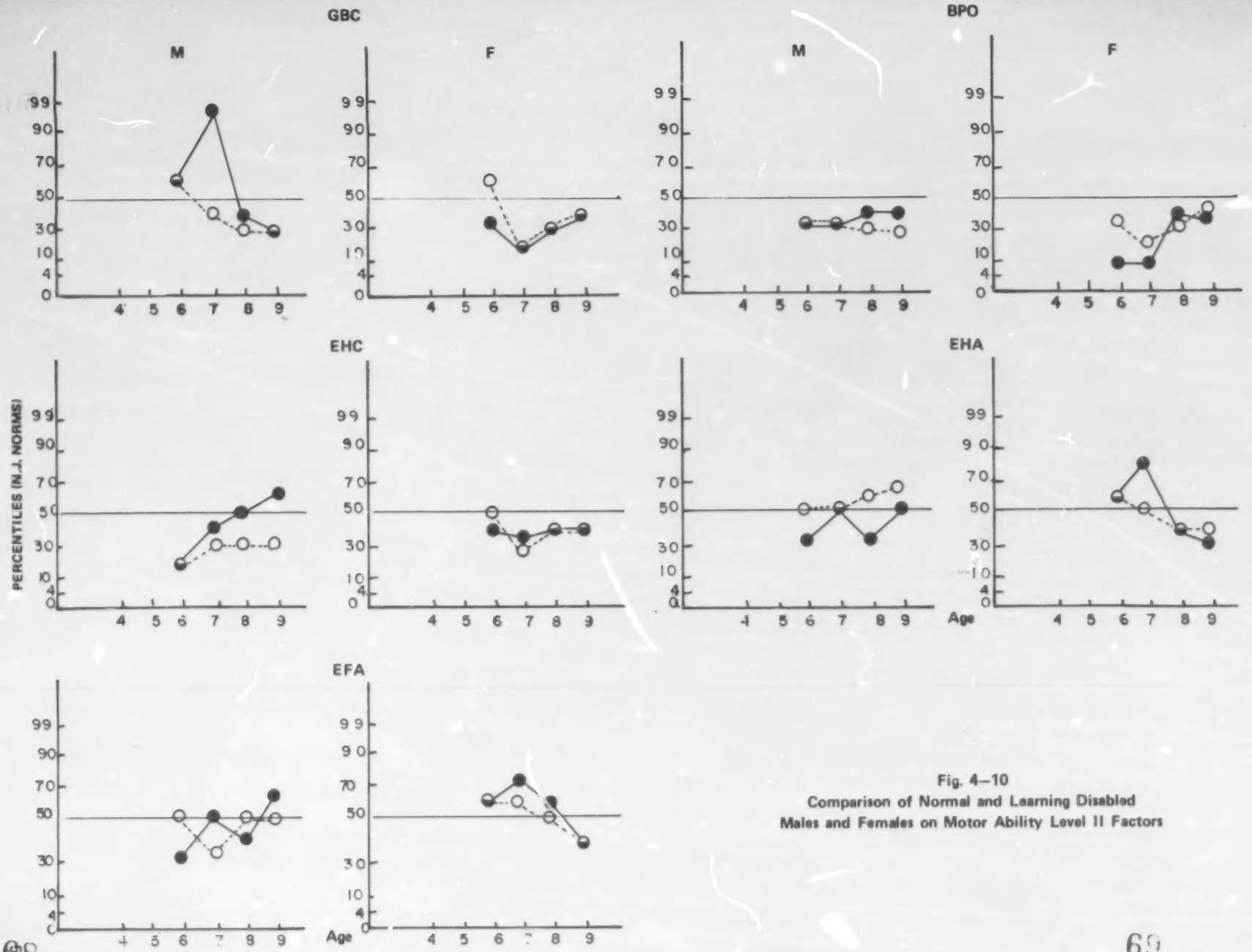


Fig. 4–10
Comparison of Normal and Learning Disabled
Males and Females on Motor Ability Level II Factors

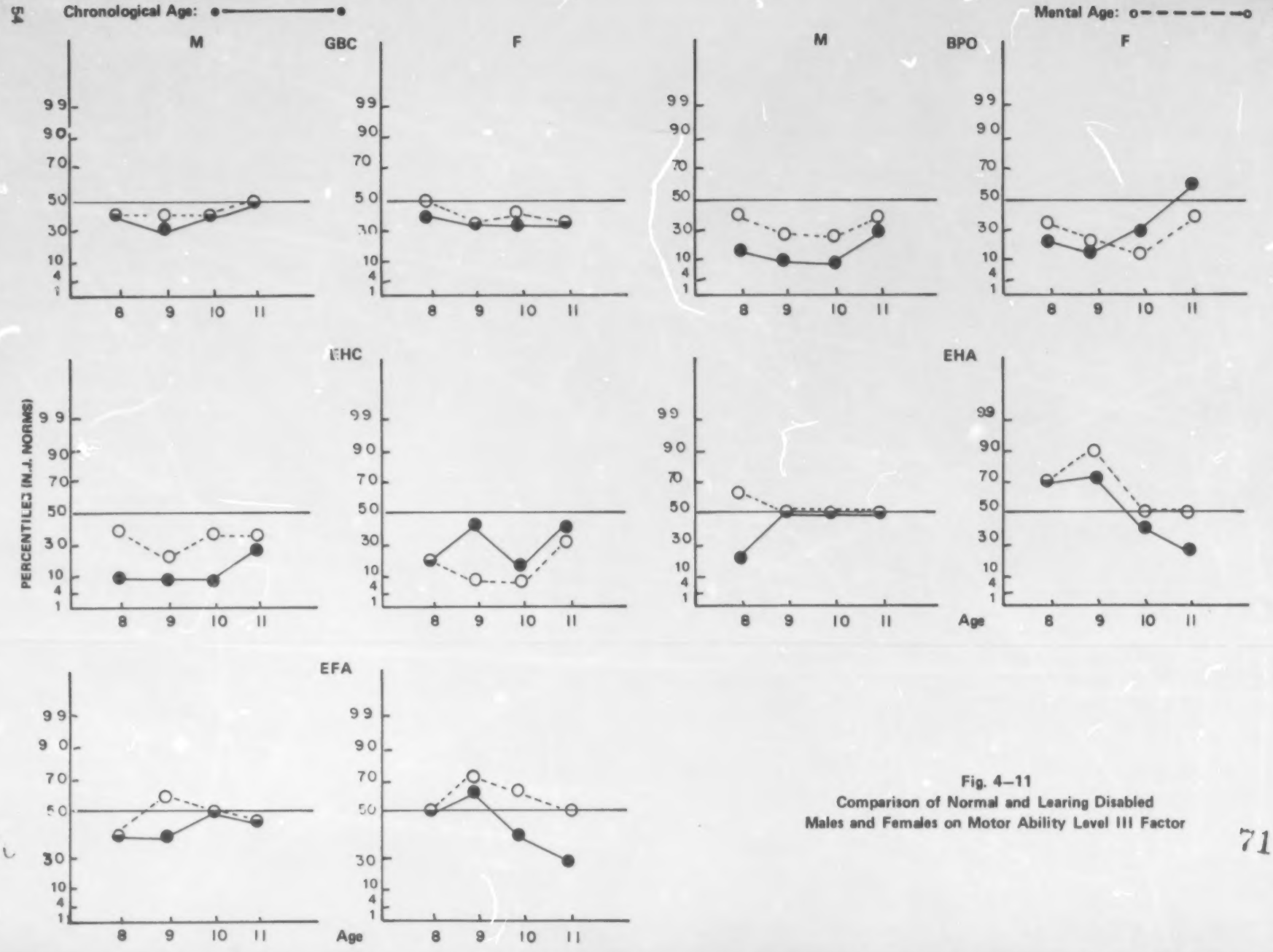


Fig. 4–11
Comparison of Normal and Learing Disabled
Males and Females on Motor Ability Level III Factor

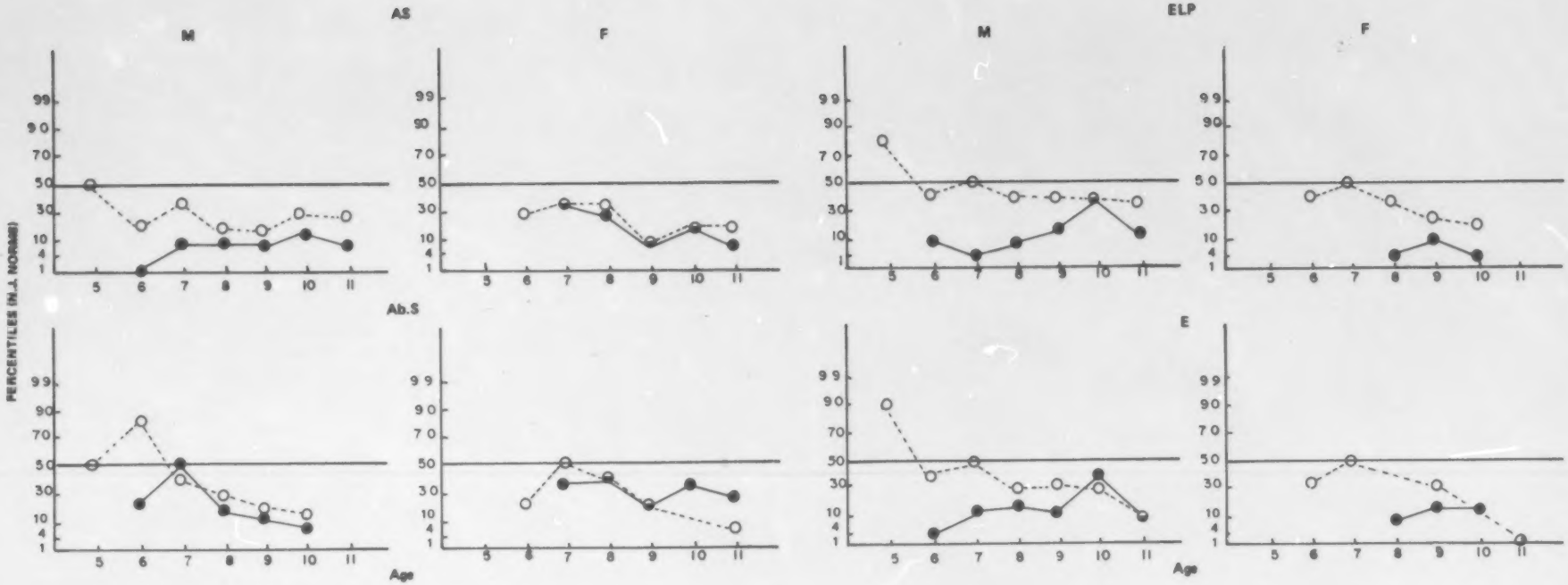


Fig. 4–12
Comparison of Normal and Learning Disabled Males and Females on Physical Fitness Level II Factors

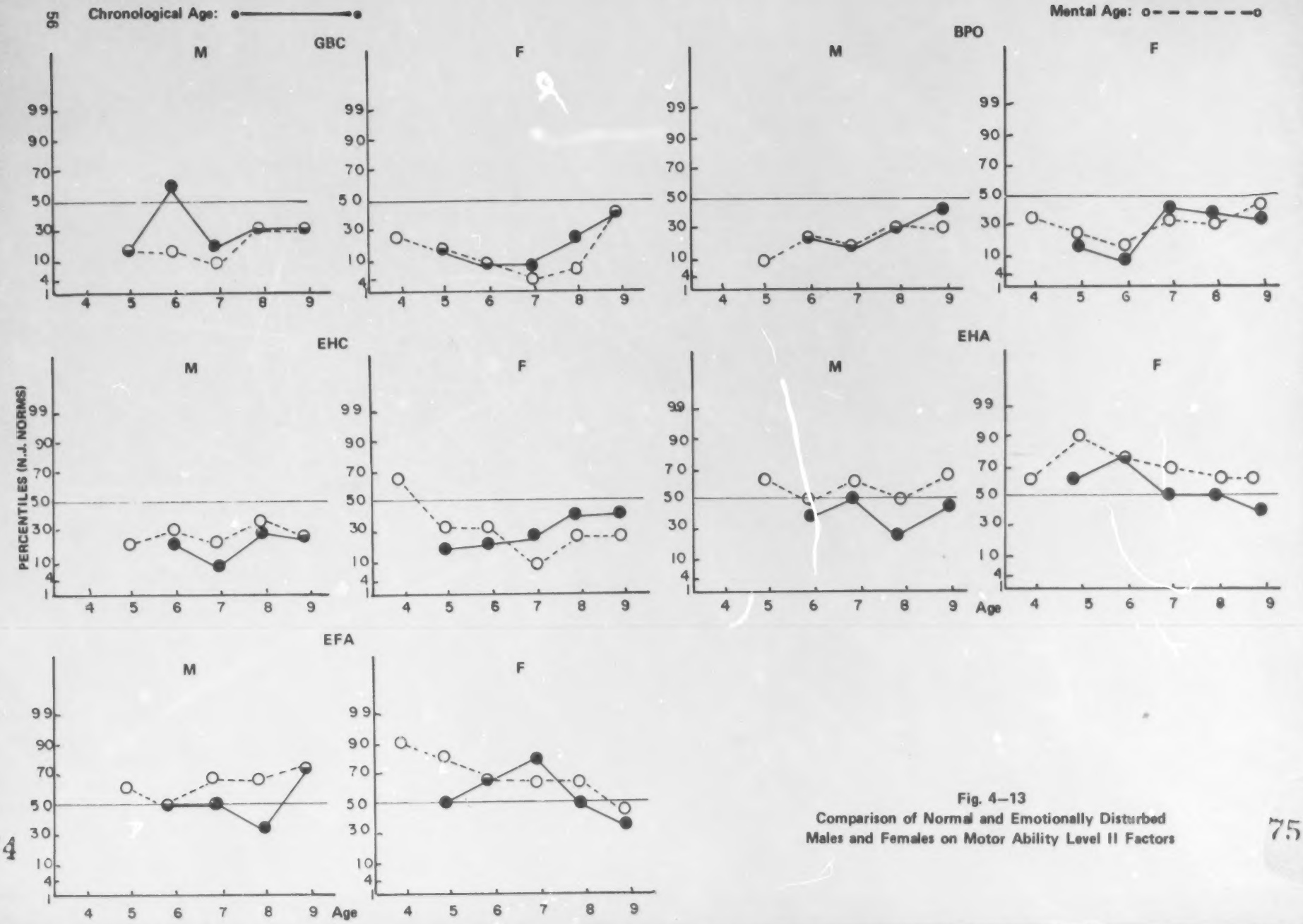


Fig. 4–13
Comparison of Normal and Emotionally Disturbed
Males and Females on Motor Ability Level II Factors

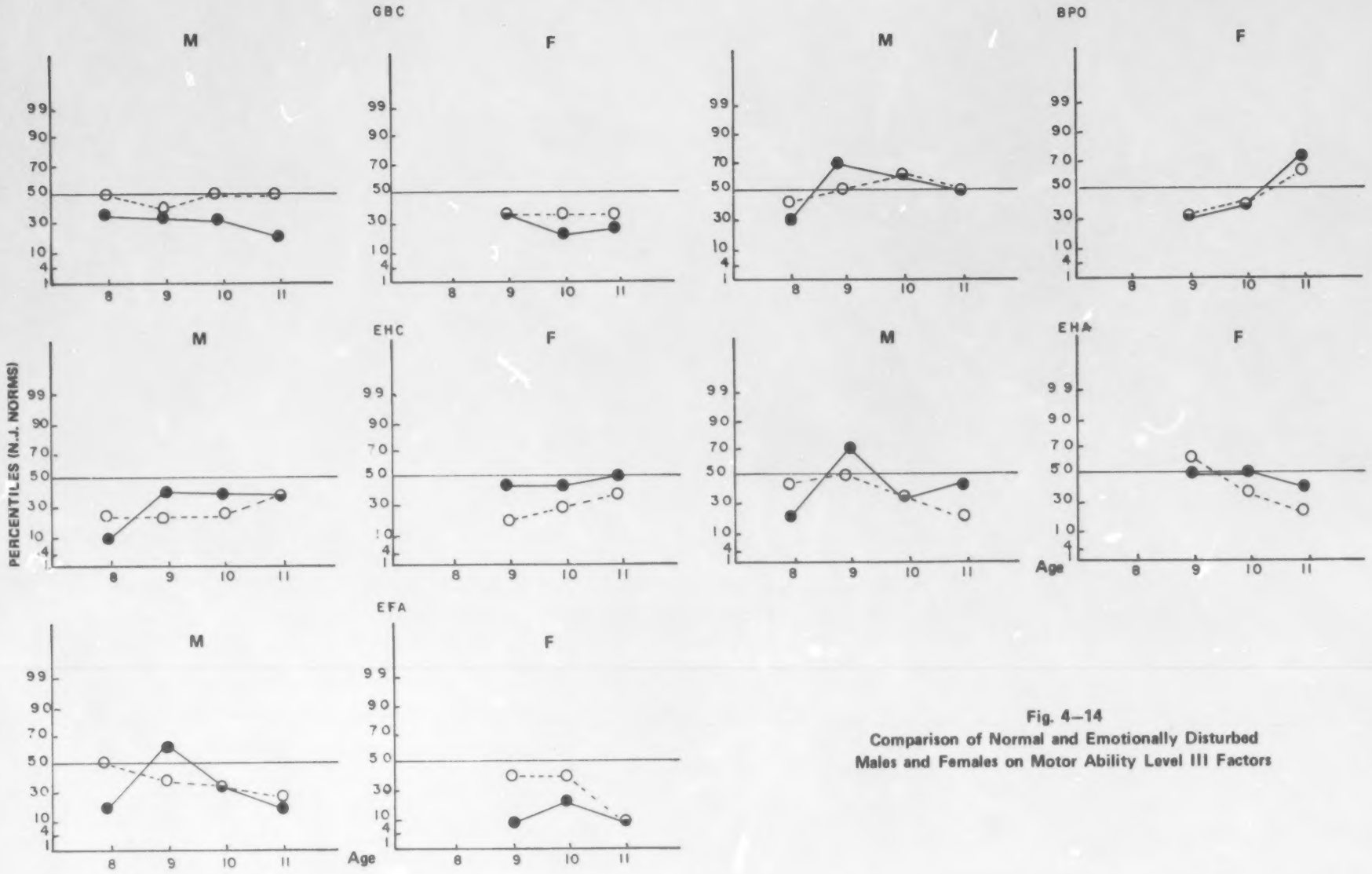


Fig. 4–14
Comparison of Normal and Emotionally Disturbed Males and Females on Motor Ability Level III Factors

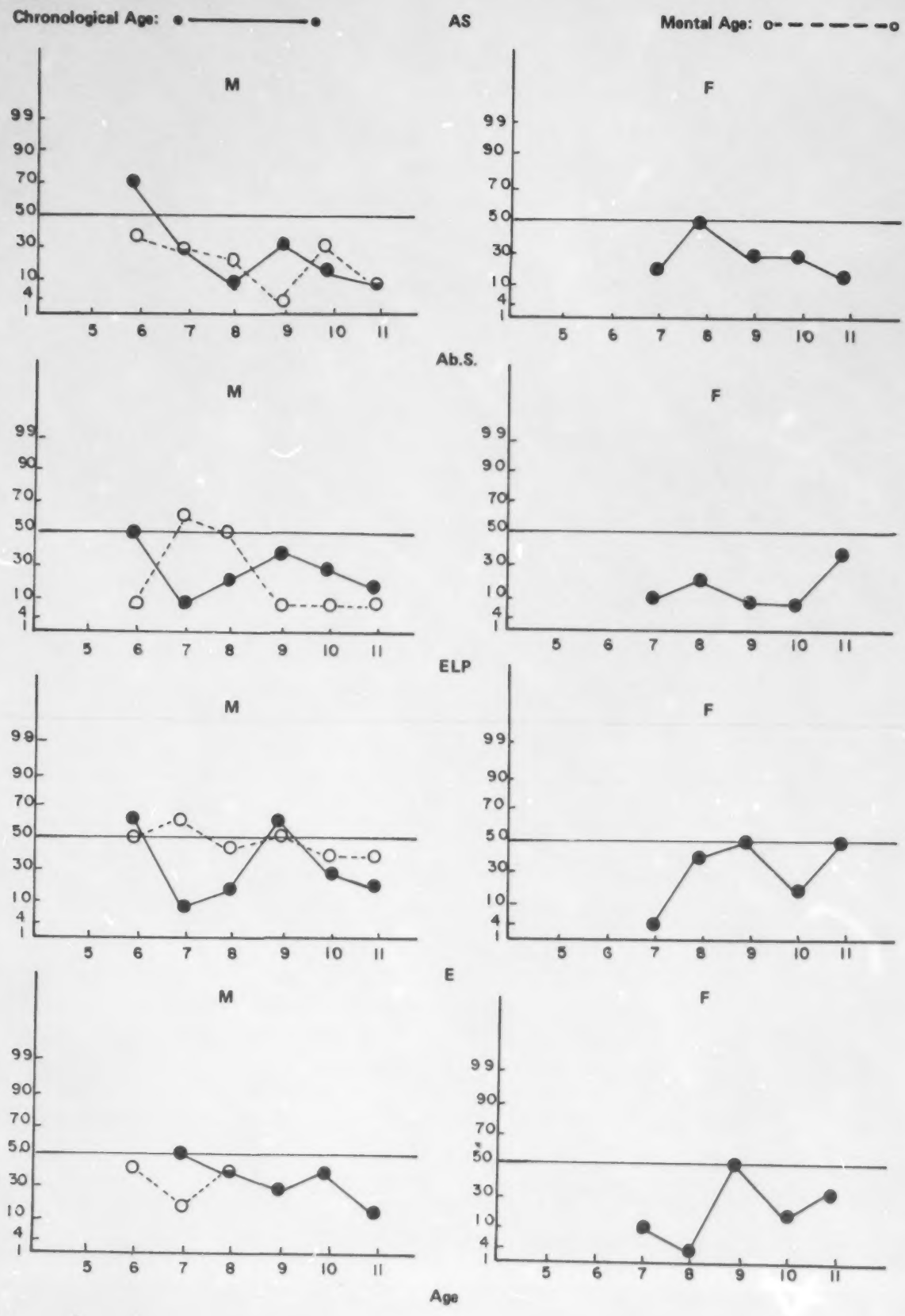


Fig. 4–15

58 Comparison of Normal and Emotionally Disturbed Males and Females on Physical Fitness Level II Factors

Motor Ability instrument, level III. LD Level III motor performance scores are illustrated in Figure 4-11. (p. 54)

- LD Males:
  - —chronological age: performance scores ranged from the 10—75th percentile, with EHA and EFA scores in close proximity to the New Jersey median.
  - —mental age: all MA factor scores equalled or exceeded the CA scores.
- LD females:
  - —CA and MA scores followed generally similar patterns.
- General observations:
  - —Male MA scores tended to be closer to the median for normal students.
  - —No discernable difference existed between the MA and CA scores for females when compared to the New Jersey median.

Physical fitness instrument, level II. Figure 4-12 highlights the CA—MA relationships of learning disabled students in terms of the physical proficiency. (p. 55)

- LD males:
  - —chronological age: all factor scores generally fall below the median line.
  - —mental age: with two exceptions (AbS and E), performance scores are equal to, or exceed, CA scores.
- LD females:
  - —chronological age: fluctuating below the median line (range 4th—50th percentile).
  - —mental age: slightly superior to CA scores, particularly ELP and E.
- General observations:
  - —Male MA scores more closely paralleled the New Jersey median than their counterpart CA scores.
  - —There was slight difference between MA and CA scores for females (favoring MA) when compared to the median line for the normal students.

Comparison of Normal and Emotionally Disturbed Students

Motor ability instrument, level II. Motor performance scores for ED boys and girls, ages 4—9, are provided in Figure 4-13. (p. 56)

- ED males:
  - —chronological age: general range of performance—10th—50th percentile.
  - —mental age: comparable to CA scores except for definite superiority in terms of EHA and EFA.
- ED females:
  - —chronological age: range of scores—10th—80th percentile.
  - —mental age: comparable to CA scores except for superiority of EHA and EFA scores.
- General observations:
  - —The MA and CA scores for both sexes tend to approximate interchangeably the New Jersey median.
  - —The MA, EHA and EFA scores for males and females are consistently equal to, or higher than, the median for normal students.

Motor ability instrument, level III. Figure 4-14 includes the median scores for ED students, ages 8-11. (p. 57)

- ED males:
  - —chronological age: a "spread" of scores, between the 1st and 3rd quartiles.
  - —mental age: a similar range of scores.
- ED females:
  - —chronological age: patterns generally similar to the male CA population.
  - —mental age: closely resembles CA patterns, with GBC and EFA favoring the MA groups and EHC and EHA supportive of the CA groups.
- General observations:
  - —The MA and CA scores for both sexes tend to approximate interchangeably the New Jersey median.
  - —The EHA and EFA for both sexes worsen between ages 9—11.

Physical fitness instrument, level II. Figure 4-15 includes only the MA scores for male ED students; (p. 58)

- ED males:
  - —chronological age: irregular growth pattern for each factor, with scores varying from the 10th to the 70th percentile.
  - —mental age: similar irregular growth pattern for each factor.
- ED females:
  - —chronological age: a pattern that closely approximates the CA factor scores of the boys.
- General observation:
  - —Only the mental age score for ELP tends to be consistent with the New Jersey median.

SUMMARY, FINDINGS AND RECOMMENDATIONS

SUMMARY

An attempt has been made to determine whether it is more appropriate to establish norms for MR, LD and ED individuals based on chronological age or mental age. A review of the literature was presented. Motor ability and physical fitness scores for individuals in each handicapped population were correlated with their chronological and mental ages. Developmental curves were plotted for the normal population and each handicapped population. Finally, the performance scores of handicapped groups (motor and physical fitness factors) were compared to the median performance scores of the normal population.

FINDINGS

A review of the literature revealed two consistent findings.

- MR children are 2-4 years behind normal children—when comparisons were based on chronological age.
- The performance of MR and normal children is comparable—when comparisons are based on mental ages.

Intercorrelations between motor ability, physical fitness, chronological age and mental age indicated:

- All correlations tended to be low and in many cases negative.
- 43 of 53 correlations reflected a more positive relationship between performance and mental age than between performance and chronological age.
- Post-test correlations supported the premise that MA is a better predictor of performance than CA (18 of 22 comparisons)

The developmental curves plotted exhibited:

- Patterns for normal students which are generally consistent with other developmental curves that have been plotted for their peer group.
  - —MA curves for MR children which closely parallel the curves for normal children.
  - — CA curves which also parallel those of normal children, but their performance level tends to be much lower.
- Developmental patterns of the LD's and ED's which are consistent with those of normal students (a slight superiority for MA over CA).

Graphs which compared the motor and physical fitness performance of the handicapped populations to the median performance of normal students reflected the following findings:

Mentally Retarded

- The MA scores of the MR population equalled or exceeded their CA scores on 25 of 28 comparisons:
  - —Motor Ability, Level II: 9 of 10
  - —Motor Ability, Level III: 9 of 10
  - —Physical Fitness, Level II: 7 of 8
- The MA scores were in the proximity of the median line for the normal population and equalled or exceeded the same on 4 occasions:
  - —Motor Ability, Level II: EHA and EFA, males and EFA, females
  - —Physical Fitness, Level II: E, females
- None of the CA scores equalled or exceeded the median.

Learning Disabled

- The MA scores of the LD population equalled or exceeded their CA scores on 17 of 28 comparisons:
  - —Motor Ability, Level II: 4 of 10
  - —Motor Ability, Level III: 8 of 10
  - —Physical Fitness, Level II: 5 of 8
- The MA scores equalled or exceeded the median for normals on 4 occasions:
  - —Motor Ability, Level II: EHA, males
  - —Motor Ability, Level III: EHA, males and females and EFA females
- None of the CA scores equalled or surpassed the median.

Emotionally Disturbed

- The MA scores of the ED pupulation equalled or exceeded their CA scores on 8 of 24 comparisons:
  - —Motor Ability, Level II: 5 of 10
  - —Motor Ability, Level III: 3 of 10

  (Most of the graphs reflected intermittent superiority for the scores based on MA and CA.)
- The MA scores equalled or surpassed the median for normals on 3 occasions:
  - —Motor Ability, Level II: EHA and EFA males and EHA females
- None of the CA scores equalled or exceeded the median.

(**Note**: The figures recorded for the number of times the median for the normal pupulation was equalled or surpassed are somewhat misleading because on several comparisons all scores met the criterion standard except for the score plotted for one year.)

RECOMMENDATIONS

Based on the evidence presented, it is posited the following conclusions can be drawn:

1. The ACTIVE motor ability and physical fitness norms based on mental ages (Chapter VI) are more appropriate for use with **mentally retarded** individuals than norms based on their chronological ages.
2. The ACTIVE motor ability and physical fitness norms based on mental ages (Chapter VI are more appropriate for use with **learning disabled** individuals than norms based on their chronological ages.
3. The ACTIVE morot ability and physical fitness norms based on mental ages (Chapter VI) are not more appropriate for use with **emotionally disturbed** individuals than norms based on their chronological ages.

CHAPTER V

LOCAL, STATE AND NATIONAL NORMS BASED ON CHRONOLOGICAL AGE

The ACTIVE Office is often questioned on the feasibility of applying the program's diagnostic-prescriptive process to normal children. The philosophy underlying ACTIVE is that all children are unique, each manifesting motor and physical fitness strengths and deficiencies. Each individual, be he handicapped, normal or gifted, will benefit from an individualized physical activity.

Initially, the adoption of ACTIVE's individualized-personalized motor and physical fitness programs required school districts to use the Township of Ocean norms. However, teachers and administrators were urged to establish their own local norms as soon as they gathered sufficient data.

The norms in this chapter provide schools, districts, and agencies with the capability of meeting the needs of the non-handicapped population. By establishing realistic standards for assessing and evaluating the performance of students who are sub-par motorically or physically, normal or gifted, realistic diagnostic-prescriptive programs can be prepared.

The norms included here are a result of the cooperative effort of teachers, administrators, college personnel and the ACTIVE staff. The normative data are presented in two sections: Section I deals with local, state and national **motor performance** norms for normal students; and Section II includes local, state and national **physical fitness** norms for normal students. All data are grouped on the basis of chronological ages.

To facilitate the location of appropriate norms tables, the data are sequenced as follows:

SECTION I

Norms
Motor Ability Norms
- Local norms
  - level II—pp. 62–67
  - level III—pp. 67–69
- State norms
  - level II—pp. 69–72
  - level III—pp. 72–75
- National norms
  - level II—pp. 75–77
  - level III—pp. 77–79

SECTION II

Physical Fitness Norms
- Local norms
  - level II—pp. 80–97
- State norms
  - level II—pp. 98–104
- National norms
  - level II—pp. 105–110

SECTION I

MOTOR ABILITY NORMS: CHRONOLOGICAL AGE

Local Norms

Nebraska, Lexington, Lexington Public Schools.

Instrument: Motor Ability Level II
Grade Level: Kindergarten
Data Gathered By: Wendy Shol

	Gross Body Coordination	Balance Postural Orientation	Eye and Hand Coordination	Eye and Hand Accuracy	Eye and Foot Accuracy		
Number of Pupils Tested	150	150	153	151	150		
	RAW SCORES	RAW SCORES	RAW SCORES	RAW SCORES	RAW SCORES	PERCENTILE	STANINE
	10	24	18	16	17	99	9
	10	22	18	14	13	96	8
	10	20	17	11	12	90	8
	10	18	16	10	10	80	7
	10	17	15	9	10	75	6
	10	17	15	8	9	70	6
	9	16	14	8	9	65	6
	9	15	14	7	8	60	5
	8	14	13	6	8	50	5
	8	13	12	5	7	40	5
	8	12	12	5	7	35	5
	8	12	11	5	6	30	4
	7	11	11	4	5	25	4
	7	10	11	4	5	20	4
	5	7	9	2	3	10	3
	4	5	7	1	2	4	2
	3	2	3	1	1	1	1

MOTOR ABILITY INDEX CONVERSION CHART (MAI)[1]

COMPOSITE STANINES	MAI	COMPOSITE STANINES	MAI	COMPOSITE STANINES	MAI	COMPOSITE STANINES	MAI
5	10	15	30	25	50	35	70
6	12	16	32	26	52	36	72
7	14	17	34	27	54	37	74
8	16	18	36	28	56	38	76
9	18	19	38	29	58	39	78
10	20	20	40	30	60	40	80
11	22	21	42	31	62	41	82
12	24	22	44	32	64	42	84
13	26	23	46	33	66	43	86
14	28	24	48	34	68	44	88
						45	90

Note: Where raw scores are repeated, record the **PERCENTILE** and/or **STANINE** score for the **UPPERMOST RAW SCORE.** For example, a "GBC" raw score of "8" reflects a percentile of "50" and a stanine of "5."

[1]The "Motor Ability Index Conversion Chart" below the Lexington norms is standardized and consequently can be applied to any ACTIVE motor norms.

Local Norms

New Jersey, Asbury Park, Asbury Park School District.

KINDERGARTEN MOTOR ABILITY NORMS

Instrument: Motor Ability Level II
Grade Level: Kindergarten
Data Gathered By: S. Long—P. Cheney

	Gross Body Coordination	Balance Postural Orientation	Eye and Hand Coordination	Eye and Hand Accuracy	Eye and Foot Accuracy		
Number of Pupils Tested	178	178	147	162	162		
	RAW SCORES	RAW SCORES	RAW SCORES	RAW SCORES	RAW SCORES	PERCENTILE	STANINE
	10	24	18	14	14	99	9
	10	24	18	12	13	96	8
	10	24	18	11	13	90	8
	10	23	17	10	12	80	7
	10	22	17	10	11	75	6
	10	22	17	9	11	70	6
	10	21	16	9	10	65	6
	10	21	16	9	10	60	5
	10	20	16	8	9	50	5
	10	18	15	7	9	40	5
	9	18	15	7	8	35	5
	8	17	14	6	7	30	4
	8	16	14	6	7	25	4
	8	15	13	6	6	20	4
	8	15	12	5	3	10	3
	6	9	10	3	3	4	2
	6	8	5	2	3	1	1

New Jersey, East Windsor, Perry Drew School.

Instrument: Motor Ability Level II
Ages: 6–8
Data Gathered By: Jerry Luz

AGE 6

Number of Pupils Tested	50	50	50	50	50	50	50	50	50	50		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	23	24	28	18	15	14	17	17	99	9
	10	10	23	23	17	18	14	13	15	16	96	8
	10	10	22	23	17	16	14	12	13	15	90	8
	9	9	19	22	15	15	11	11	13	14	80	7
	9	9	19	22	15	15	11	10	12	13	75	6
	8	9	18	21	14	14	10	9	11	13	70	6
	8	9	17	20	14	14	9	9	11	12	65	6
	8	9	16	19	13	14	8	8	11	12	60	5
	7	8	15	18	12	13	7	7	10	11	50	5
	5	8	14	16	11	12	6	6	9	10	40	5
	5	7	13	16	11	12	6	6	9	9	35	5
	4	6	11	16	10	11	5	5	8	9	30	4
	4	5	11	15	10	10	5	5	7	9	25	4
	3	5	10	14	9	10	4	4	7	8	20	4
	3	4	5	12	8	9	2	2	4	6	10	3
	2	3	3	11	7	8	1	0	3	5	4	2
	2	2	0	6	6	7	0	0	2	3	1	1

AGE 7

	Gross Body Coordination		Balance Postural Orientation		Eye and Hand Coordination		Eye and Hand Accuracy		Eye and Foot Accuracy			
Number of Pupils Tested	50	50	50	50	50	50	50	50	50	50		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	24	24	18	18	17	15	16	16	99	9
	10	10	24	24	17	18	17	13	16	15	96	8
	10	10	23	24	16	17	15	12	15	14	90	8
	10	10	22	23	16	16	13	11	14	13	80	7
	10	10	22	23	15	16	13	11	13	13	75	6
	9	10	20	23	15	15	12	10	12	12	70	6
	9	10	20	22	15	15	12	9	11	12	65	6
	9	10	19	22	15	15	11	9	11	12	60	5
	9	9	17	21	13	14	10	9	10	11	50	5
	9	9	15	21	13	14	10	8	9	10	40	5
	9	9	15	20	13	13	9	8	9	9	35	5
	8	8	15	19	12	13	9	7	9	8	30	4
	8	8	15	19	12	13	9	7	9	8	25	4
	7	8	14	18	11	12	8	6	7	7	20	4
	5	7	13	15	9	11	7	5	6	6	10	3
	4	4	12	12	8	11	3	2	5	4	4	2
	3	4	7	11	8	9	2	2	4	2	1	1

AGE 8

Number of Pupils Tested	50	50	50	50	50	50	50	50	50	50		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	24	24	18	18	18	17	18	17	99	9
	10	10	24	24	18	17	18	17	18	17	96	8
	10	10	22	23	17	17	14	15	17	16	90	8
	9	10	21	21	16	16	13	14	16	15	80	7
	9	10	21	21	16	16	13	14	16	15	75	6
	9	9	21	21	15	15	12	13	16	15	70	6
	9	9	21	21	15	15	12	13	15	14	65	6
	9	9	20	21	15	15	12	13	15	14	60	5
	8	9	19	20	14	14	11	12	15	13	50	5
	8	8	19	20	13	14	10	11	14	13	40	5
	8	8	18	20	12	13	10	11	14	12	35	5
	8	8	18	19	12	13	9	10	14	12	30	4
	7	8	18	19	12	13	8	10	13	12	25	4
	7	8	17	19	11	12	8	10	12	11	20	4
	6	7	16	17	10	11	6	8	11	10	10	3
	5	6	15	16	8	9	6	7	9	9	4	2
	4	5	13	14	8	8	6	7	9	7	1	1

New Jersey, Rutherford, Rutherford, School District
Instrument: Motor Ability Level II
Ages: 5–8
Data Gathered By: Debbie Cordasco

AGE 5

	Gross Body Coordination		Balance Postural Orientation		Eye and Hand Coordination		Eye and Hand Accuracy		Eye and Foot Accuracy			
Number of Pupils Tested	65	70	84	60	69	69	71	84	68	70		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	24	24	18	17	18	18	18	18	99	9
	10	10	24	24	17	17	18	15	18	18	96	8
	10	10	23	23	17	16	15	12	18	15	90	8
	9	10	22	21	16	15	15	12	15	12	80	7
	9	10	21	20	15	15	12	11	15	12	80	7
	8	10	21	20	15	14	12	9	13	9	70	6
	8	10	20	19	15	14	12	9	12	9	65	6
	8	9	19	19	14	14	12	6	12	6	60	5
	8	8	18	17	13	13	9	6	9	6	50	5
	8	8	17	16	12	11	9	5	6	3	40	5
	8	8	16	15	12	11	9	3	6	3	35	5
	8	8	14	15	11	11	9	3	6	3	30	4
	7	8	14	[illegible]	10	10	6	3	6	3	25	4
	7	8	13	14	9	10	[illegible]	3	3	0	20	4
	6	7	11	11	6	7	3	0	0	0	10	3
	5	5	7	9	4	5	2	0	0	0	4	2
	3	3	6	8	1	3	0	0	0	0	1	1

AGE 6

Number of Pupils Tested	89	88	88	101	93	88	121	92	85	80		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	24	24	18	18	18	18	18	18	99	9
	10	10	24	24	18	18	18	18	18	18	96	8
	10	10	22	23	17	17	18	18	18	15	90	8
	10	10	20	21	17	16	18	15	15	12	80	7
	10	10	20	21	16	16	17	15	15	9	75	6
	10	10	19	21	16	16	15	12	12	9	70	6
	10	10	19	20	16	15	15	12	12	9	65	6
	10	10	18	20	15	15	15	12	9	6	60	5
	9	9	17	19	15	14	12	9	6	6	50	5
	8	9	16	18	14	13	12	9	6	3	40	5
	8	9	16	18	14	13	12	6	6	3	35	5
	8	8	15	17	13	12	9	6	5	3	30	4
	7	8	15	17	12	12	9	3	3	0	25	4
	6	8	14	16	11	11	6	3	3	0	20	4
	6	7	11	13	8	9	4	3	0	0	10	3
	5	6	10	8	6	6	0	0	0	0	4	2
	3	4	6	4	4	5	0	0	0	0	1	1

AGE 7

	Gorss Body Coordination		Balance Postural Orientation		Eye and Hand Coordination		Eye and Hand Accuracy		Eye and Foot Accuracy			
Number of Pupils Tested	95	86	61	58	95	90	69	80	89	97		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	24	24	18	18	18	18	18	18	99	9
	10	10	24	24	18	18	18	18	18	18	96	8
	10	10	23	23	17	18	18	15	18	18	90	8
	10	10	22	22	17	17	18	14	18	18	80	7
	10	10	22	22	16	17	17	12	15	16	75	6
	10	10	21	22	16	16	15	12	15	12	70	6
	10	10	20	20	15	16	15	12	12	12	65	6
	10	10	20	20	15	16	15	12	12	12	60	5
	9	10	19	18	15	15	15	12	9	9	50	5
	9	9	17	16	14	14	12	9	9	6	40	5
	8	8	16	14	14	13	12	9	6	6	35	5
	8	8	16	12	13	13	12	9	6	4	30	4
	8	8	15	12	13	12	12	6	5	3	25	4
	7	7	14	11	12	12	12	6	3	3	20	4
	6	6	11	9	9	9	6	3	1	0	10	3
	4	4	7	6	7	7	6	0	0	0	4	2
	3	3	6	4	3	5	3	0	0	0	1	1

AGE 8

Number of Pupils Tested	59	78	72	105	57	53	52	54	53	55		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	24	24	18	18	18	18	18	18	99	9
	10	10	24	24	18	18	18	18	18	18	96	8
	10	10	23	24	18	18	18	18	18	18	90	8
	10	10	22	23	16	17	16	17	17	16	80	7
	10	9	21	23	16	17	16	16	16	16	75	6
	10	9	21	22	16	16	16	16	16	16	70	6
	10	8	20	22	15	16	16	16	16	15	65	6
	9	8	20	21	14	15	16	16	14	15	60	5
	9	8	19	20	14	15	14	14	13	14	50	5
	8	8	18	19	13	13	12	14	12	13	40	5
	8	7	17	18	12	12	12	12	12	12	35	5
	8	6	16	18	12	12	12	12	11	11	30	4
	8	6	15	17	11	11	12	12	8	11	25	4
	7	6	14	16	10	9	10	10	8	11	20	4
	6	4	12	13	6	6	8	8	6	6	10	3
	4	3	10	10	5	5	6	4	3	3	4	2
	4	3	7	8	5	3	3	3	0	3	1	1

Local Norms

New Jersey, Oakhurst, Township of Ocean School District.
Instrument: Motor Ability Level II
Age: 5
Data Gathered By: D&A Staff

	Gross Body Coordination	Balance Postural Orientation	Eye and Hand Coordination	Eye and Hand Accuracy	Eye and Foot Accuracy		
n=	234	244	249	262	258	PERCENTILE	STANINE
	10	24	18	16	15	99	9
	10	23	17	12	9	96	8
	10	21	16	10	7	90	8
	10	20	15	9	6	80	7
	10	29	15	9	6	75	6
	10	29	14	8	6	70	6
	9	18	14	8	6	65	6
	9	17	14	8	6	60	5
	8	16	13	7	5	50	5
	8	15	12	6	5	40	5
	8	14	12	6	4	35	5
	8	14	12	5	4	30	4
	8	13	11	5	4	25	4
	7	12	10	4	4	20	4
	6	9	8	2	3	10	3
	6	6	7	1	2	4	2
	4	3	4	0	0	1	1

Local Norms

New Jersey, Oakhurst, Township of Ocean School District
Instrument: Motor Ability Level III
Ages: 8–11
Data Gathered By: Township of Ocean School Staff

AGE 8

	RAW SCORES				RAW SCORES							
	CABLE JUMP		BEAM WALK		BALL BOUNCE		THROW		KICK			
n=	65	66	103	120	125	84	39	43	48	44		
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	143	137	69	67	16	18	18	17	99	9
	10	10	138	135	67	66	15	17	15	16	96	8
	10	9	130	128	64	64	15	15	15	15	90	8
	9	9	118	120	60	61	13	14	13	13	60	7
	9	8	118	116	58	60	13	13	12	12	75	6
	8	8	114	113	56	59	12	11	12	12	70	6
	8	8	112	108	55	58	12	10	11	11	65	6
	8	8	110	103	54	57	12	10	11	11	60	6
	7	7	99	94	52	55	11	9	10	10	50	5
	6	6	91	87	48	53	10	8	8	8	40	5
	6	5	80	83	47	51	10	7	8	8	35	5
	5	5	73	81	44	50	10	7	7	7	30	4
	5	4	71	74	43	49	9	7	7	7	25	4
	4	3	69	69	42	47	8	6	6	7	20	4
	2	0	59	56	39	43	7	4	5	4	10	3
	0	0	45	43	37	40	5	3	4	4	4	2
	0	0	35	31	36	35	4	2	3	2	1	1

AGE 9

	RAW SCORES				RAW SCORES							
	CABLE JUMP		BEAM WALK		BALL BOUNCE		THROW		KICK			
n=	67	66	110	96	152	140	59	55	56	51		
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	142	142	72	70	18	17	18	16	99	9
	10	10	141	140	71	68	17	16	17	15	96	8
	10	9	136	135	68	66	16	15	17	15	90	8
	9	9	127	132	64	61	15	14	14	14	80	7
	8	9	125	128	62	60	15	13	13	13	75	6
	8	8	121	126	61	58	14	12	13	13	70	6
	8	8	120	123	60	57	13	12	12	12	65	6
	7	7	119	122	58	56	12	11	12	12	60	6
	7	6	114	116	56	55	12	11	10	11	50	5
	6	5	110	113	53	53	11	10	10	10	40	5
	5	5	108	110	50	52	11	9	9	10	35	5
	5	4	107	109	49	51	11	9	8	9	30	4
	4	4	105	105	48	49	10	8	8	9	25	4
	3	3	102	100	45	47	10	8	8	8	20	4
	1	1	93	85	43	43	7	7	6	6	10	3
	0	0	82	63	40	41	5	6	4	5	4	2
	0	0	72	37	38	38	5	5	3	4	1	1

AGE 10

	RAW SCORES				RAW SCORES							
	CABLE JUMP		BEAM WALK		BALL BOUNCE		THROW		KICK			
n=	86	106	117	131	141	116	78	92	67	55		
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	142	142	75	72	17	18	18	18	99	9
	10	10	138	135	71	67	17	16	18	16	96	8
	10	10	130	128	67	64	16	16	17	16	90	8
	9	9	129	125	63	60	15	14	16	15	80	7
	8	8	127	123	62	60	15	15	16	14	75	6
	8	8	125	121	61	58	15	13	15	14	70	6
	8	8	123	120	59	58	14	12	13	13	65	6
	8	8	121	117	58	57	13	12	12	12	60	6
	6	7	115	112	55	55	12	11	10	11	50	5
	5	6	112	110	53	52	11	10	9	11	40	5
	4	6	109	106	52	51	11	9	8	10	35	5
	3	5	107	105	51	50	10	9	7	10	30	4
	3	5	106	103	50	48	9	9	7	10	25	4
	2	4	104	100	47	47	9	8	7	8	20	4
	0	2	95	94	44	43	8	7	5	7	10	3
	0	1	83	80	40	37	7	6	4	5	4	2
	0	0	75	73	36	35	6	2	4	5	1	1

AGE 11

	RAW SCORES											
	CABLE JUMP		BEAM WALK		BALL BOUNCE		THROW		KICK			
n=	72	63	124	102	212	161	44	61	50	48		
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	143	140	77	74	17	18	17	17	99	9
	10	10	139	135	73	70	16	17	16	17	96	8
	9	9	136	136	70	67	15	17	15	17	90	8
	8	9	132	131	64	64	14	15	14	15	80	7
	8	9	128	129	64	62	13	14	14	15	75	6
	7	9	126	124	62	61	13	14	13	15	70	6
	7	9	122	121	61	60	12	13	13	14	65	6
	7	9	119	117	58	59	12	12	13	14	60	6
	6	8	117	115	56	56	12	11	11	13	50	5
	5	6	115	112	54	55	11	10	10	12	40	5
	5	5	110	108	52	54	9	10	10	12	35	5
	5	4	108	105	51	52	9	9	9	12	30	4
	5	3	106	102	49	51	9	8	8	11	25	4
	3	3	105	98	47	49	9	8	8	11	20	4
	0	0	100	97	43	44	8	6	7	10	10	3
	0	0	88	92	39	42	7	5	6	6	4	2
	0	0	77	80	37	35	4	4	5	6	1	1

State Norms

New Jersey.

Instrument: Motor Ability Level II
Ages: 4-9
Data Gathered By: ACTIVE Office

AGE 4

	Gross Body Coordination		Balance Postural Orientation		Eye and Hand Coordination		Eye and Hand Accuracy		Eye and Foot Accuracy			
Number of Pupils Tested	82	74	151	74	87	115	73	69	114	66		
RAW	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	24	23	18	17	16	17	16	15	99	9
	10	10	23	23	17	16	14	16	15	13	96	8
	10	10	21	21	16	15	13	14	13	8	90	8
	9	10	18	18	15	12	11	12	10	6	80	7
	9	10	17	18	14	11	10	12	9	6	75	6
	9	9	16	18	14	10	10	10	9	6	70	6
	9	9	14	16	13	8	10	10	7	6	65	6
	8	8	13	16	11	7	9	9	6	6	60	5
	8	8	12	15	10	6	8	9	6	5	50	5
	8	8	11	13	8	5	6	6	5	4	40	5
	8	7	10	12	6	4	5	5	5	4	35	5
	7	7	9	11	5	4	5	5	5	3	30	4
	7	6	9	11	3	4	4	4	4	2	25	4
	6	6	8	10	3	3	3	4	4	2	20	4
	4	4	6	6	1	2	1	3	3	1	10	3
	1	3	4	5	0	0	0	1	1	0	4	2
	0	2	1	4	0	0	0	1	0	0	1	1

AGE 5

	Gross Body Coordination		Balance Postural Orientation		Eye and Hand Coordination		Eye and Hand Accuracy		Eye and Foot Accuracy			
Number of Pupils Tested	787	467	775	530	823	517	850	543	786	468		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	24	24	18	18	18	15	16	15	99	9
	10	10	23	24	18	18	16	13	14	13	96	8
	10	10	21	23	16	17	14	11	12	11	90	8
	10	10	20	21	15	16	11	9	9	9	80	7
	10	10	19	21	15	15	10	9	8	8	75	6
	9	10	18	20	14	15	10	8	8	8	70	6
	9	10	18	20	14	14	9	8	8	7	65	6
	9	10	17	19	13	14	9	7	7	7	60	5
	8	9	15	18	12	13	8	6	6	5	50	5
	8	8	14	16	11	12	7	5	6	5	40	5
	8	8	13	16	11	11	6	5	5	5	35	5
	8	8	13	15	10	10	6	4	5	4	30	4
	7	7	11	13	8	9	5	4	5	4	25	4
	6	6	10	12	7	6	5	3	4	4	20	4
	5	5	7	7	4	4	4	1	3	2	10	3
	4	3	5	5	3	3	2	1	1	0	4	2
	3	1	4	3	0	1	0	0	0	0	1	1

AGE 6

Number of Pupils Tested	451	446	740	515	740	346	731	372	567	330		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	24	24	18	18	18	16	18	17	99	9
	10	10	24	24	18	18	16	14	16	16	96	8
	10	10	23	23	17	17	14	12	14	15	90	8
	9	10	21	23	16	16	12	10	13	12	80	7
	9	10	21	22	16	16	12	9	12	11	75	6
	9	10	20	21	15	15	11	9	11	11	70	6
	9	10	19	21	15	15	10	8	10	9	65	6
	8	10	19	20	14	14	10	8	9	9	60	5
	8	9	17	19	13	13	9	7	8	8	50	5
	8	9	15	17	12	12	8	6	7	7	40	5
	8	9	14	16	11	11	7	6	6	6	35	5
	7	8	13	15	10	10	7	5	6	6	30	4
	7	8	12	14	8	8	6	5	5	5	25	4
	6	8	10	13	7	7	6	5	4	4	20	4
	5	6	6	8	5	5	4	4	2	3	10	3
	4	5	5	6	4	4	3	2	1	1	4	2
	2	4	3	5	2	2	0	1	0	0	1	1

AGE 7

	Gross Body Coordination		Balance Postural Orientation		Eye and Hand Coordination		Eye and Hand Accuracy		Eye and Foot Accuracy			
Number of Pupils Tested	713	559	768	554	712	478	712	428	720	455		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		PERCENTILE	STANINE
	M	F	M	F	M	F	M	F	M	F		
	10	10	24	24	18	18	18	18	18	18	99	9
	10	10	24	24	18	18	17	15	16	16	96	8
	10	10	24	24	18	18	14	13	14	14	90	8
	10	10	23	23	17	17	12	12	12	12	80	7
	10	10	22	23	17	17	12	11	11	11	75	6
	10	10	22	22	16	16	11	10	11	11	70	6
	10	10	21	22	16	16	11	10	10	10	65	6
	10	10	21	21	16	15	10	9	9	9	60	5
	10	10	20	21	15	15	9	8	8	8	50	5
	9	10	18	19	14	14	8	7	8	7	40	5
	9	10	17	19	13	13	8	7	7	7	35	5
	8	9	16	18	13	12	8	6	6	6	30	4
	8	9	15	17	12	11	7	6	6	6	25	4
	8	8	13	15	11	10	6	5	5	5	20	4
	7	7	8	9	8	5	5	4	3	3	10	3
	5	5	5	5	6	3	3	2	2	1	4	2
	3	3	3	4	4	2	2	1	0	0	1	1

AGE 8

Number of Pupils Tested	130	143	147	145	135	95	162	117	144	105		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		PERCENTILE	STANINE
	M	F	M	F	M	F	M	F	M	F		
	10	10	24	24	18	18	18	18	18	17	99	9
	10	10	24	24	18	18	17	16	18	17	96	8
	10	10	24	24	18	18	16	16	16	16	90	8
	10	10	23	23	17	16	15	15	13	13	80	7
	10	10	23	23	16	16	14	14	12	12	75	6
	10	10	22	21	16	16	13	13	12	12	70	6
	10	10	22	21	16	15	12	12	11	10	65	6
	10	10	21	21	15	15	11	11	10	10	60	5
	10	10	20	19	14	14	10	10	8	8	50	5
	9	9	18	17	13	12	8	8	7	7	40	5
	8	9	17	15	12	12	7	8	6	6	35	5
	8	8	16	12	11	11	7	7	6	6	30	4
	8	8	15	12	10	10	6	6	5	5	25	4
	6	8	13	8	9	9	5	5	4	4	20	4
	5	5	7	4	7	7	4	4	2	2	10	3
	3	4	1	1	5	5	3	3	1	1	4	2
	0	0	1	1	4	2	1	2	0	0	1	1

AGE 9

	Gross Body Coordination		Balance Postural Orientation		Eye and Hand Coordination		Eye and Hand Accuracy		Eye and Foot Accuracy			
Number of Pupils Tested	133	109	93	124	75	56	103	79	121	71		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		PERCENTILE	STANINE
	M	F	M	F	M	F	M	F	M	F		
	10	10	24	24	18	18	18	18	18	18	99	9
	10	10	24	24	18	18	18	18	18	18	96	8
	10	10	24	23	17	18	16	17	16	17	90	8
	10	10	23	22	17	17	14	16	14	16	80	7
	10	10	22	22	15	17	13	15	13	15	75	6
	10	10	21	21	15	16	12	14	11	14	70	6
	10	10	20	20	14	16	11	13	10	13	65	6
	10	9	20	20	14	16	11	12	10	13	60	5
	10	9	18	17	13	15	10	11	9	12	50	5
	9	8	15	15	13	13	9	10	8	10	40	5
	8	8	15	14	12	13	8	8	7	9	35	5
	7	8	12	11	12	11	8	8	7	8	30	4
	6	8	8	10	10	9	7	8	6	7	25	4
	5	8	5	8	8	8	6	6	5	6	20	4
	3	5	1	1	7	6	5	4	3	4	10	3
	1	4	1	1	4	4	2	3	2	2	4	2
	0	2	1	1	1	3	1	2	0	1	1	1

New Jersey.
Instrument: Motor Ability Level III
Ages: 8-11
Data Gathered By: ACTIVE Office

AGE 8

	CABLE JUMP		BEAM WALK		BALL BOUNCE		TARGET–THROW		TARGET–KICK			
Number of Pupils Tested	190	161	347	377	223	210	232	175	247	170		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		PERCENTILE	STANINE
	M	F	M	F	M	F	M	F	M	F		
	19	19	141	141	69	70	17	17	17	17	99	9
	9	10	138	136	66	68	16	15	16	16	96	8
	9	9	131	132	62	65	15	13	14	14	90	8
	8	8	122	125	58	60	13	11	13	13	80	7
	7	7	119	123	56	56	12	10	12	12	75	6
	7	7	118	119	55	55	11	9	12	12	70	6
	7	6	115	116	54	53	11	9	11	11	65	6
	6	6	112	112	53	51	10	8	10	10	60	5
	5	5	105	102	51	49	9	8	10	9	50	5
	4	4	94	89	48	46	8	7	8	8	40	5
	3	4	91	86	46	45	8	6	8	7	35	5
	2	3	80	83	45	44	8	5	7	7	30	4
	2	2	73	74	43	42	7	5	6	6	25	4
	1	1	70	71	42	40	6	4	6	5	20	4
	1	1	54	56	39	34	4	3	4	3	10	3
	0	0	40	43	36	30	3	2	2	2	4	2
	0	0	17	31	16	27	1	1	1	1	1	1

AGE 9

Number of Pupils Tested	CABLE JUMP 238 212		BEAM WALK 442 355		BALL BOUNCE 290 250		TARGET–THROW 232 193		TARGET–KICK 281 201			
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		PERCENTILE	STANINE
	M	F	M	F	M	F	M	F	M	F		
	19	19	143	142	72	70	16	16	18	16	99	9
	10	10	140	139	70	67	15	14	17	15	96	8
	10	9	135	135	66	62	14	11	15	14	90	8
	9	9	127	128	62	58	12	10	14	13	80	7
	8	8	123	126	61	56	11	9	13	12	75	6
	8	8	120	123	59	55	11	9	12	12	70	6
	7	8	117	121	57	54	10	9	12	11	65	6
	6	7	114	119	56	53	10	8	11	11	60	5
	6	6	111	113	53	52	9	7	10	10	50	5
	5	5	106	109	50	48	8	7	9	9	40	5
	4	4	105	105	49	47	8	6	8	9	35	5
	4	4	100	102	48	46	7	6	8	8	30	4
	3	3	95	98	47	46	7	5	7	8	25	4
	2	3	92	93	46	44	6	5	7	7	20	4
	1	1	77	78	43	41	5	3	5	5	10	3
	0	1	63	63	38	39	4	2	3	3	4	2
	0	0	34	20	15	31	2	0	1	1	1	1

AGE 10

Number of Pupils Tested	CABLE JUMP 305 286		BEAM WALK 293 278		BALL BOUNCE 373 323		TARGET–THROW 268 199		TARGET–KICK 212 160			
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		PERCENTILE	STANINE
	M	F	M	F	M	F	M	F	M	F		
	10	10	142	142	76	73	18	17	18	16	99	9
	10	10	140	138	72	69	17	16	17	16	96	8
	10	10	132	134	68	65	16	14	16	15	90	8
	9	9	125	127	62	60	14	13	15	14	80	7
	8	9	123	125	61	58	14	12	14	14	75	6
	8	8	120	124	59	57	13	12	13	13	70	6
	8	8	118	120	57	56	12	11	13	12	65	6
	7	7	115	117	55	55	12	11	12	12	60	5
	6	7	110	108	53	53	11	10	11	11	50	5
	5	6	103	100	50	51	10	9	10	10	40	5
	4	5	99	99	49	50	9	8	9	10	35	5
	3	5	91	94	48	48	9	8	9	9	30	4
	3	4	84	87	46	48	8	7	8	8	25	4
	2	3	80	80	45	45	8	7	7	7	20	4
	1	2	72	70	40	41	6	5	5	6	10	3
	0	1	62	61	34	36	5	4	4	3	4	2
	0	0	44	30	28	32	3	3	1	1	1	1

AGE 11

	CABLE JUMP		BEAM WALK		BALL BOUNCE		TARGET–THROW		TARGET–KICK			
Number of Pupils Tested	227	121	319	175	198	120	192	72	179	58		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		PERCENTILE	STANINE
	M	F	M	F	M	F	M	F	M	F		
	19	19	143	140	80	70	18	18	17	17	99	9
	10	9	137	140	74	68	17	17	17	17	96	8
	10	9	130	130	68	64	16	16	16	16	90	8
	9	8	122	119	63	60	15	15	15	15	80	7
	9	8	119	115	62	58	14	14	14	15	75	6
	8	8	116	110	59	57	14	14	14	14	70	6
	8	8	114	108	58	55	13	13	13	14	65	6
	7	7	112	104	56	52	13	12	13	13	60	5
	6	7	108	97	52	50	11	12	12	12	50	5
	5	6	100	89	48	47	11	11	10	12	40	5
	5	4	96	83	48	45	10	10	10	12	35	5
	5	4	92	81	45	44	10	10	9	11	30	4
	3	3	80	75	43	40	9	9	8	11	25	4
	3	2	74	74	40	38	8	8	8	10	20	4
	1	0	65	70	36	35	6	7	7	8	10	3
	0	0	55	67	30	32	5	5	6	6	4	2
	0	0	44	62	26	30	3	4	5	6	1	1

Rhode Island.
Instrument: Motor Ability Level II
Ages: 6-7 (male/female)
Norms Prepared By: Ben Lombardo, Rhode Island College, Providence, RI

AGE 6

	Gross Body Coordination	Balance Postural Orientation	Eye and Hand Coordination	Eye and Hand Accuracy	Eye and Foot Accuracy		
Number of Pupils Tested	100	100	100	100	99		
	RAW SCORES	RAW SCORES	RAW SCORES	RAW SCORES	RAW SCORES	PERCENTILE	STANINE
	10	23	18	14	16	99	9
	10	22	17	14	15	96	8
	10	21	17	13	14	90	8
	10	11	16	11	13	80	7
	9	19	16	11	13	75	6
	9	19	15	10	12	70	6
	9	18	15	10	12	65	6
	9	18	15	10	11	60	5
	8	16	14	9	11	50	5
	8	16	13	8	10	40	5
	8	15	13	7	10	35	5
	7	15	12	7	9	30	4
	7	14	12	6	9	25	4
	7	13	12	6	8	20	4
	6	11	11	4	7	10	3
	4	9	10	2	6	4	2
	4	7	5	1	4	1	1

AGE 7

	Gross Body Coordination	Balance Postural Orientation	Eye and Hand Coordination	Eye and Hand Accuracy	Eye and Foot Accuracy		
Number of Pupils Tested	86	86	86	86	86		
	RAW SCORES	RAW SCORES	RAW SCORES	RAW SCORES	RAW SCORES	PERCENTILE	STANINE
	10	23	18	15	17	99	9
	10	23	18	15	17	96	8
	10	21	18	13	15	90	8
	9	19	17	12	14	80	7
	9	19	16	12	14	75	6
	9	18	16	11	14	70	6
	8	18	16	11	13	65	6
	8	17	15	11	13	60	5
	8	16	14	10	12	50	5
	7	14	13	8	12	40	5
	7	14	13	8	11	35	5
	7	14	13	7	11	30	4
	6	13	12	7	11	25	4
	6	13	12	6	10	20	4
	5	12	11	6	9	10	3
	4	11	9	4	7	4	2
	4	7	6	1	6	1	1

National Norms

United States.

Instrument: Motor Ability Level II

Ages: 5-8

Data Gathered By: ACTIVE Office

AGE 5

Number of Pupils Tested	842	467	820	626	852	596	935	600	820	774		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		PERCENTILE	STANINE
	M	F	M	F	M	F	M	F	M	F		
	10	10	24	24	18	18	18	17	17	16	99	9
	10	10	23	24	18	17	16	14	14	14	96	8
	10	10	21	23	16	16	14	11	12	13	90	8
	10	10	20	21	15	15	12	9	10	11	80	7
	10	10	19	20	15	15	11	9	9	10	75	6
	9	10	18	19	14	15	10	8	8	9	70	6
	9	10	17	19	14	14	9	8	8	9	65	6
	9	10	17	18	13	14	9	7	8	8	60	5
	8	9	15	17	12	13	8	6	7	7	50	5
	8	8	14	16	11	12	7	5	6	6	40	5
	8	8	13	15	11	11	6	5	6	5	35	5
	8	8	12	14	10	10	6	4	5	5	30	4
	7	7	11	13	8	9	6	4	5	5	25	4
	6	6	10	11	7	8	5	3	4	4	20	4
	5	5	7	8	4	5	4	1	3	3	10	3
	4	3	5	5	3	3	3	1	1	1	4	2
	3	1	4	3	1	1	0	0	0	0	1	1

75

AGE 6

	Gross Body Coordination		Balance Postural Orientation		Eye and Hand Coordination		Eye and Hand Accuracy		Eye and Foot Accuracy			
Number of Pupils Tested	828	761	1071	815	1041	610	897	640	867	373		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	24	24	18	18	18	18	18	17	99	9
	10	10	24	24	18	18	15	14	16	15	96	8
	10	10	22	23	17	17	13	12	14	15	90	8
	10	10	21	22	16	16	12	10	12	12	80	7
	9	10	20	21	16	16	11	9	12	11	75	6
	9	10	19	20	15	15	11	9	11	11	70	6
	9	10	19	20	15	15	10	8	10	10	65	6
	9	9	18	19	14	14	9	8	10	9	60	5
	8	9	17	18	13	14	9	7	8	8	50	5
	8	9	15	16	12	13	7	6	7	8	40	5
	8	8	14	15	12	12	6	6	7	7	35	5
	8	8	13	14	11	12	6	5	6	6	30	4
	7	8	12	14	10	11	5	5	5	5	25	4
	7	7	10	12	8	11	5	5	5	5	20	4
	6	6	8	8	5	8	3	3	3	3	10	3
	4	5	5	6	4	5	1	1	1	1	4	2
	2	4	3	4	3	3	0	0	0	1	1	1

AGE 7

Number of Pupils Tested	756	578	912	556	648	513	749	456	762	524		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	24	24	18	18	18	17	18	18	99	9
	10	10	24	24	18	18	16	15	16	16	96	8
	10	10	24	24	18	18	14	13	14	15	90	8
	10	10	22	24	17	17	12	11	12	13	80	7
	10	10	22	23	17	17	12	11	11	12	75	6
	10	10	21	22	15	16	11	10	11	11	70	6
	10	10	21	22	15	16	11	10	10	11	65	6
	10	10	20	21	15	15	10	9	9	10	60	5
	10	10	19	21	14	15	9	8	8	9	50	5
	9	10	18	19	13	14	8	7	8	8	40	5
	9	10	18	19	13	13	8	7	7	7	35	5
	8	9	17	18	12	12	8	7	6	7	30	4
	8	9	16	17	12	12	7	6	6	6	25	4
	8	8	14	17	10	11	6	6	5	5	20	4
	6	7	8	12	8	5	5	4	4	3	10	3
	5	6	5	5	6	3	3	3	2	1	4	2
	3	3	5	4	3	2	2	1	0	0	1	1

AGE 8

Number of Pupils Tested	Gross Body Coordination		Balance Postural Orientation		Eye and Hand Coordination		Eye and Hand Accuracy		Eye and Foot Accuracy			
	133	136	150	138	138	138	165	108	155	87		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		PERCENTILE	STANINE
	M	F	M	F	M	F	M	F	M	F		
	10	10	24	24	18	18	18	18	18	17	99	9
	10	10	24	24	18	18	17	17	18	17	96	8
	10	10	24	24	18	18	16	16	16	16	90	8
	10	10	23	23	17	16	15	15	13	14	80	7
	10	10	23	23	16	15	14	14	12	12	75	6
	10	10	22	22	16	15	13	14	11	10	70	6
	10	10	22	21	16	15	11	12	10	10	65	6
	10	10	21	21	15	14	11	12	9	9	60	5
	9	9	20	19	14	13	10	9	8	8	50	5
	9	9	18	18	13	12	8	8	6	7	40	5
	8	9	17	17	12	11	7	7	6	5	35	5
	8	8	16	15	11	10	7	7	5	5	30	4
	8	8	15	10	10	9	6	6	4	4	25	4
	6	8	13	8	9	9	5	5	3	4	20	4
	5	6	6	4	7	6	4	4	2	1	10	3
	3	4	1	2	55	4	3	2	1	0	4	2
	0	0	1	1	4	2	1	1	0	0	1	1

National Norms

United States.

Instrument: Motor Ability Level III

Ages: 8-11

Data Gatnered By: ACTIVE Office

AGE 8

Number of Pupils Tested	(Cable Jump) Gross Body Coordination		(Beam Walk) Balance Postural Orientation		(Ball Bounce) Eye–Hand Coordination		(Throw) Eye–Hand Accuracy		(Kick) Eye–Foot Accuracy			
	219	226	376	384	298	350	301	249	331	239		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		PERCENTILE	STANINE
	M	F	M	F	M	F	M	F	M	F		
	10	10	144	141	103	164	17	17	17	17	99	9
	9	10	142	135	76	97	16	14	16	15	96	8
	9	9	138	130	64	83	14	12	15	14	90	8
	8	9	127	124	58	72	12	10	13	13	80	7
	7	8	122	121	57	67	11	9	12	12	75	6
	7	7	119	119	55	63	11	9	12	12	70	6
	7	6	118	116	54	59	10	8	11	11	65	6
	6	6	115	111	53	55	10	8	11	10	60	5
	5	5	108	100	51	51	9	7	10	9	50	5
	4	3	98	91	48	48	8	6	9	8	40	5
	4	3	93	86	47	47	8	6	8	7	35	5
	4	3	85	83	45	46	7	5	8	7	30	4
	3	2	74	74	44	45	7	4	7	6	25	4
	2	2	71	71	42	44	6	4	6	5	20	4
	1	1	56	56	40	37	4	3	4	4	10	3
	0	0	41	43	37	32	3	2	2	2	4	2
	0	0	27	31	25	28	1	1	1	0	1	1

AGE 9

	(Cable Jump) Gross Body Coordination		(Beam Walk) Balance Postural Orientation		(Ball Bounce) Eye–Hand Coordination		(Throw) Eye–Hand Accuracy		(Kick) Eye–Foot Accuracy			
Number of Pupils Tested	313	125	463	357	372	298	298	243	337	214		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	144	143	119	101	18	16	18	17	99	9
	10	10	143	139	119	70	15	14	16	15	96	8
	10	9	141	135	119	65	13	11	15	14	90	8
	9	9	131	128	119	58	11	10	14	13	80	7
	9	9	127	126	119	57	11	10	13	13	75	6
	8	8	123	123	72	55	11	9	12	12	70	6
	8	8	120	122	56	55	10	9	12	12	65	6
	7	8	117	120	55	53	10	9	11	11	60	5
	6	7	112	113	53	52	9	8	10	11	50	5
	6	6	107	108	50	49	8	7	9	10	40	5
	5	5	106	105	49	47	8	7	9	9	35	5
	4	4	102	102	49	47	7	6	8	9	30	4
	4	3	95	97	47	46	7	6	8	9	25	4
	3	2	92	93	46	45	7	5	7	8	20	4
	1	1	73	78	43	42	5	4	6	5	10	3
	0	0	58	63	33	39	4	2	3	3	4	2
	0	0	18	20	13	31	2	0	1	1	1	1

AGE 10

Number of Pupils Tested	310	290	316	255	393	337	273	203	219	166		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	144	141	84	114	18	17	18	18	99	9
	10	10	142	138	74	74	17	16	17	16	96	8
	10	10	140	135	69	66	16	14	16	15	90	8
	9	9	130	128	63	61	14	13	15	14	80	7
	8	9	126	125	61	60	14	12	14	14	75	6
	8	8	124	122	60	58	13	12	13	13	70	6
	8	8	121	120	58	57	12	11	13	12	65	6
	7	7	119	116	56	56	12	11	12	12	60	5
	6	7	112	108	53	53	11	10	11	11	50	5
	5	6	106	101	50	51	10	9	10	10	40	5
	4	5	102	96	49	50	9	8	9	10	35	5
	4	5	96	93	48	49	9	8	9	9	30	4
	3	4	88	84	46	48	8	7	8	8	25	4
	2	3	81	78	45	45	8	7	7	7	20	4
	1	2	74	70	40	41	6	5	5	6	10	3
	0	1	63	60	34	36	5	4	3	3	4	2
	0	0	44	30	28	32	3	3	1	1	1	1

AGE 11

	(Cable Jump) Gross Body Coordination		(Beam Walk) Balance Postural Orientation		(Ball Bounce) Eye—Hand Coordination		(Throw) Eye—Hand Accuracy		(Kick) Eye—Foot Accuracy			
Number of Pupils Tested	228	122	372	175	200	135	203	72	179	58		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	144	140	0	127	18	18	17	17	99	9
	10	10	144	140	74	124	17	17	17	17	96	8
	10	9	144	130	68	100	16	16	16	16	90	8
	9	9	132	119	63	64	15	15	15	15	80	7
	9	8	128	115	62	62	14	14	15	15	75	6
	8	8	123	110	60	60	14	14	14	14	70	6
	8	8	120	108	58	58	13	13	13	14	65	6
	7	7	116	104	56	56	13	12	13	13	60	5
	6	7	111	97	52	52	12	12	12	12	50	5
	5	5	102	89	50	48	11	11	10	12	40	5
	5	4	100	83	48	47	10	10	10	12	35	5
	5	4	96	81	45	45	10	10	9	11	30	4
	3	3	89	75	43	42	9	9	8	11	25	4
	3	2	77	74	40	40	8	8	8	10	20	4
	1	0	67	70	36	36	6	7	7	8	10	3
	0	0	56	67	30	32	5	5	6	6	4	2
	[illegible]	0	46	62	26	30	3	4		6	1	1

Motor Screening
Briggs Elementary School
Maquoketa Community Schools, Iowa

SECTION II

PHYSICAL FITNESS NORMS

Local Norms

Illinois, Quincy, Quincy School District.

Instrument: Physical Fitness Level II

Ages: 12-17

Data Gathered By: Angelo Rinchiuso

AGE 12

	RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 8-MINUTE RUN[1]		PERCENTILE	STANINE
N=	139	138	139	137	139	138	139	138		
	M	F	M	F	M	F	M	F		
	84	67	127	117	82	77	5.2	4.7	99	9
	66	50	127	117	77	72	5.0	3.7	96	8
	55	37	127	117	75	70	4.7	3.5	90	8
	41	22	127	117	71	66	4.7	3.3	80	7
	38	19	127	117	68	65	4.9	3.3	75	6
	35	16	120	117	67	63	4.3	3.3	70	6
	32	14	100	117	65	62	4.2	3.2	65	6
	29	12	100	105	64	62	4.1	3.1	60	5
	23	9	79	89	62	58	4.0	3.0	50	5
	18	7	60	68	61	56	3.6	2.7	40	5
	13	6	55	62	59	55	3.5	2.5	35	5
	11	5	52	55	58	53	3.5	2.4	30	4
	10	4	50	50	56	52	3.4	2.1	25	4
	8	3	42	45	54	50	3.2	1.7	20	4
	5	0	31	31	50	48	2.7	1.5	10	3
	2	0	26	26	48	44	2.4	1.2	4	2
	0	0	20	20	43	38	1.7	1.1	1	1

PHYSICAL FITNESS INDEX CONVERSION CHART (PFI)[2]

COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI
4	10	12	30	20	50	28	70
5	13	13	33	21	53	29	73
6	15	14	35	22	55	30	75
7	18	15	38	23	58	31	79
8	20	16	40	24	60	32	80
9	23	17	43	25	63	33	83
10	25	18	45	26	65	34	85
11	28	19	48	27	68	35	88
						36	90

[1]Note: Measured in laps (440 yards) and 1/8's of a lap. (Thus, 4.0 reflects four complete laps; 3.7 reflects three complete laps, plus 7/8's of a lap.)

[2]The "Physical Fitness Index Conversion Chart" for Quincy School District students, age 12, is standardized and consequently can be applied to any ACTIVE physical fitness norms.

AGE 13

	RAW SCORES ARM HANG		SIT-UPS		RAW SCORES BROAD JUMP		8-MINUTE RUN		PERCENTILE	STANINE
N=	270	279	279	270	279	271	287	270		
	M	F	M	F	M	F	M	F		
	100	63	127	118	93	71	5.4	5.3	99	9
	79	50	127	118	83	76	5.2	4.4	96	8
	60	33	127	118	79	73	5.0	4.0	90	8
	50	22	127	118	75	69	4.5	3.5	80	7
	45	20	127	118	74	67	4.5	3.4	75	6
	40	17	127	115	73	67	4.3	3.4	70	6
	38	15	127	100	71	65	4.2	3.3	65	6
	35	14	127	90	70	64	4.1	3.2	60	5
	28	10	100	70	67	62	4.0	3.1	50	5
	21	8	77	60	64	59	3.5	3.0	40	5
	19	7	71	58	64	58	3.5	2.7	35	5
	16	6	66	51	61	57	3.3	2.7	30	4
	13	5	60	50	60	55	3.2	2.6	25	4
	10	4	50	44	59	51	3.1	2.4	20	4
	6	0	36	30	53	50	3.0	2.1	10	3
	0	0	26	24	43	44	2.3	1.7	4	2
	0	0	15	20	39	39	1.6	1.3	1	1

AGE 14

	RAW SCORES ARM HANG		SIT-UPS		RAW SCORES BROAD JUMP		12-MINUTE RUN		PERCENTILE	STANINE
N=	277	258	256	277	277	257	277	255		
	M	F	M	F	M	F	M	F		
	85	42	117	128	90	83	8.3	7.9	99	9
	75	32	117	128	88	78	8.1	7.4	96	8
	66	26	117	128	84	74	7.7	6.2	90	8
	56	20	115	128	79	70	7.2	5.0	80	7
	49	18	100	128	77	67	7.0	4.5	75	6
	44	15	95	128	77	65	6.7	4.4	70	6
	40	14	80	127	75	64	6.3	4.3	65	6
	37	12	70	125	74	63	6.0	4.2	60	5
	30	9	63	99	71	60	5.6	4.1	50	5
	26	7	54	94	68	58	5.4	4.0	40	5
	21	6	50	84	66	57	5.1	4.0	35	5
	20	5	50	75	65	56	5.0	3.7	30	4
	17	3	42	65	64	54	4.7	3.6	25	4
	14	3	40	54	62	53	4.4	3.5	20	4
	8	0	30	38	56	49	3.6	3.0	10	3
	2	0	20	23	47	44	2.7	2.5	4	2
	0	0	8	15	29	38	1.7	1.6	1	1

AGE 15

	RAW SCORES ARM HANG		SIT-UPS		BROAD JUMP		12-MINUTE RUN		PERCENTILE	STANINE
N=	130	141	130	141	130	152	130	140		
	M	F	M	F	M	F	M	F		
	116	46	135	126	93	82	8.0	6.0	99	9
	107	35	126	115	90	78	7.8	5.2	96	8
	71	29	126	115	88	75	7.2	5.0	90	8
	65	22	126	115	85	71	7.0	4.5	80	7
	63	20	126	90	84	69	6.5	4.3	75	6
	61	17	126	80	82	67	6.4	4.2	70	6
	60	14	126	70	80	65	6.2	4.2	65	6
	54	12	126	63	79	62	6.1	4.1	60	5
	49	9	125	51	77	59	6.0	4.0	50	5
	34	6	103	50	73	58	5.3	3.7	40	5
	31	5	90	45	72	57	5.1	3.6	35	5
	28	5	75	42	71	56	5.0	3.5	30	4
	26	4	65	37	70	55	5.0	3.4	25	4
	20	2	59	35	65	53	4.7	3.4	20	4
	12	0	51	28	59	50	4.0	3.0	10	3
	5	0	36	22	49	46	3.5	2.1	4	2
	0	0	14	11	26	41	3.0	2.0	1	1

AGE 16

	RAW SCORES ARM HANG		SIT-UPS		BROAD JUMP		12-MINUTE RUN		PERCENTILE	STANINE
N=	75	85	75	84	75	85	75	86		
	M	F	M	F	M	F	M	F		
	113	50	126	115	101	80	8.1	6.4	99	9
	78	36	126	115	98	77	7.7	5.5	96	8
	69	30	126	105	96	72	7.2	5.0	90	8
	61	19	126	75	88	68	6.5	4.4	80	7
	55	15	126	70	86	67	6.3	4.3	75	6
	52	13	126	60	85	65	6.2	4.2	70	6
	50	10	125	52	85	63	6.1	4.1	65	6
	47	9	120	50	83	60	6.0	4.0	60	5
	42	8	102	50	80	59	5.6	4.0	50	5
	36	7	82	41	78	57	5.1	3.6	40	5
	34	6	73	40	75	57	5.0	3.5	35	5
	32	6	70	35	75	55	5.0	3.4	30	4
	28	3	61	33	74	53	5.0	3.3	25	4
	24	2	54	30	72	52	4.3	3.1	20	4
	6	0	43	23	67	46	3.5	2.7	10	3
	0	0	26	16	54	40	2.5	2.1	4	2
	0	0	12	8	46	38	2.0	2.0	1	1

AGE 17

	RAW SCORES ARM HANG		SIT-UPS		RAW SCORES BROAD JUMP		12-MINUTE RUN		PERCENTILE	STANINE
N=	67	62	67	62	67	62	67	62		
	M	F	M	F	M	F	M	F		
	110	59	126	126	104	86	7.3	7.1	99	9
	95	52	126	115	100	79	7.0	6.0	96	8
	74	35	126	114	96	73	6.6	5.0	90	8
	64	27	126	97	91	67	6.4	4.5	80	7
	61	23	126	73	90	65	6.4	4.3	75	6
	61	18	126	67	89	64	6.3	4.1	70	6
	59	13	125	55	87	63	6.1	4.0	65	6
	52	11	102	51	86	61	6.0	4.0	60	5
	44	8	92	50	83	58	5.7	3.6	50	5
	37	5	82	40	79	56	5.3	3.5	40	5
	36	4	70	39	76	54	5.2	3.4	35	5
	34	3	61	37	74	54	5.0	3.1	30	4
	31	2	54	35	72	52	5.0	3.0	25	4
	20	1	50	30	69	51	4.4	3.0	20	4
	12	0	40	20	64	41	4.0	3.0	10	3
	2	0	31	20	34	32	3.0	2.5	4	2
	0	0	25	10	37	31	2.3	1.0	1	1

Minnesota, Slayton, Slayton Public Schools.
Instrument: Physical Fitness Level II
Ages: 6-15
Data Gathered By: Chuck Benda

AGE 6

	RAW SCORES ARM HANG		SIT-UPS		RAW SCORES BROAD JUMP		200 YD. DASH		PERCENTILE	STANINE
N=	89	68	89	68	88	68	88	68		
	M	F	M	F	M	F	M	F		
	53	37	104	55	53	53	36	39	99	9
	38	24	79	51	51	50	38	41	96	8
	31	20	60	35	49	47	39	42	90	8
	23	16	33	30	47	45	40	43	80	7
	22	15	30	27	47	43	41	43	75	6
	21	14	23	24	46	42	42	44	70	6
	21	13	21	22	44	41	43	44	65	6
	16	12	20	20	43	40	43	45	60	5
	15	10	17	19	42	38	44	46	50	5
	12	8	14	15	41	37	45	47	40	5
	10	7	12	14	39	36	46	48	35	5
	9	7	11	12	38	36	47	48	30	4
	8	6	8	10	37	35	47	49	25	4
	7	5	7	10	35	35	48	50	20	4
	6	4	2	4	34	32	49	51	10	3
	4	3	0	2	31	29	53	55	4	2
	2	3	0	0	26	28	60	56	1	1

AGE 7

	RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 200 YD. DASH		PERCENTILE	STANINE
N=	78	75	80	76	79	75	78	75		
	M	F	M	F	M	F	M	F		
	65	64	150	197	61	58	33	34	99	9
	52	64	110	150	58	57	34	37	96	8
	45	40	87	139	56	52	36	38	90	8
	34	30	55	94	53	50	37	40	80	7
	33	26	50	59	52	49	37	41	75	6
	30	23	49	44	51	48	38	41	70	6
	27	21	45	40	50	48	38	41	65	6
	25	19	41	39	49	47	38	42	60	5
	22	16	34	33	48	45	39	43	50	5
	17	14	27	30	46	44	41	43	40	5
	15	13	26	26	45	43	42	44	35	5
	13	13	24	23	45	42	42	45	30	4
	12	12	19	21	44	41	43	46	25	4
	11	10	16	18	42	40	43	48	20	4
	7	9	7	15	40	37	46	49	10	3
	5	6	2	9	37	33	48	52	4	2
	4	1	0	0	36	32	48	52	1	1

AGE 8

	RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 200 YD. DASH		PERCENTILE	STANINE
N=	69	73	67	72	67	72	67	72		
	M	F	M	F	M	F	M	F		
	89	69	150	150	62	62	33	35	99	9
	83	60	150	150	59	56	34	36	96	8
	64	43	150	110	58	53	35	37	90	8
	43	34	125	68	57	50	36	39	80	7
	40	32	100	50	54	50	36	39	75	6
	34	23	71	45	54	49	37	40	70	6
	33	21	59	38	53	48	37	40	65	6
	30	20	49	35	52	48	38	41	60	5
	24	17	37	30	51	47	39	42	50	5
	18	15	30	27	49	45	40	43	40	5
	18	14	27	22	49	45	40	44	35	5
	16	13	24	21	48	43	41	44	30	4
	16	12	21	20	47	43	41	44	25	4
	15	11	16	17	45	41	42	45	20	4
	11	9	13	10	43	39	44	47	10	3
	10	3	10	5	41	36	47	52	4	2
	7	0	7	1	37	35	49	64	1	1

AGE 9

	RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 200 YD. DASH		PERCENTILE	STANINE
N=	84	84	83	83	83	84	83	84		
	M	F	M	F	M	F	M	F		
	99	64	150	150	64	63	30	30	99	9
	84	62	150	150	62	59	30	32	96	8
	72	47	150	150	61	58	32	34	90	8
	63	36	150	125	58	55	33	35	80	7
	61	33	126	125	58	54	33	35	75	6
	58	30	125	115	57	54	34	36	70	6
	55	27	125	101	57	53	34	36	65	6
	49	23	125	100	56	53	34	37	60	5
	44	19	80	61	55	51	35	37	50	5
	40	16	58	50	54	49	37	38	40	5
	35	15	53	49	53	48	37	39	35	5
	32	15	47	43	53	48	38	39	30	4
	27	13	41	38	52	46	38	40	25	4
	25	12	34	32	52	46	39	40	20	4
	16	9	27	27	49	42	41	43	10	3
	13	4	21	20	43	39	43	45	4	2
	13	2	19	10	38	38	44	52	1	1

AGE 10

	RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 200 YD. DASH		PERCENTILE	STANINE
N=	79	77	85	77	84	77	85	76		
	M	F	M	F	M	F	M	F		
	102	75	175	150	72	72	29	31	99	9
	92	66	150	150	70	69	29	31	96	8
	76	53	150	150	57	65	31	32	90	8
	60	42	125	125	64	63	32	33	80	7
	55	38	125	125	63	63	32	33	75	6
	50	35	125	125	62	60	32	34	70	6
	47	34	120	125	61	59	32	34	65	6
	45	30	113	125	60	58	32	35	60	5
	42	25	94	96	59	55	33	36	50	5
	37	19	75	68	57	53	34	38	40	5
	35	17	63	60	56	52	35	38	35	5
	32	16	55	58	55	52	35	38	30	4
	30	15	50	42	54	51	36	39	25	4
	26	12	50	34	53	49	36	39	20	4
	18	9	33	28	50	48	37	41	10	3
	8	5	25	20	48	40	41	44	4	2
	5	1	15	17	46	34	44	44	1	1

AGE 11

	RAW SCORES ARM HANG		SIT-UPS		RAW SCORES BROAD JUMP		200 YD. DASH		PERCENTILE	STANINE
N=	72	80	73	82	72	80	87	75		
	M	F	M	F	M	F	M	F		
	93	83	161	155	78	72	28	28	99	9
	88	70	160	150	75	70	28	29	96	8
	74	65	150	150	74	68	29	30	90	8
	70	52	150	150	71	66	30	32	80	7
	66	45	150	150	69	65	30	32	75	6
	64	41	150	150	67	65	30	32	70	6
	62	37	150	150	66	64	31	32	65	6
	61	35	150	130	65	64	31	33	60	5
	56	27	130	110	64	62	32	34	50	5
	41	21	130	100	64	61	33	35	40	5
	38	20	125	100	63	60	33	35	35	5
	33	17	111	86	62	60	33	35	30	4
	31	16	110	70	61	59	33	35	25	4
	25	14	100	60	60	57	34	35	20	4
	21	11	57	41	57	54	35	36	10	3
	15	7	50	25	55	47	36	38	4	2
	10	2	23	21	53	35	37	38	1	1

AGE 12

	RAW SCORES ARM HANG		SIT-UPS		RAW SCORES BROAD JUMP		8-MINUTE RUN		PERCENTILE	STANINE
N=	91	73	96	74	98	75	81	68		
	M	F	M	F	M	F	M	F		
	90	71	150	130	87	77	4.7	4.5	99	9
	81	70	150	127	83	77	4.6	4.4	96	8
	73	61	150	117	80	75	4.5	4.2	90	8
	64	45	130	117	75	71	4.4	3.7	80	7
	62	43	130	117	75	71	4.3	3.6	75	6
	57	41	130	117	73	70	4.2	3.5	70	6
	55	36	127	117	72	69	4.2	3.5	65	6
	51	29	125	117	71	67	4.2	3.4	60	5
	46	21	125	116	69	65	4.1	3.2	50	5
	36	15	125	116	67	63	3.7	3.2	40	5
	32	14	124	80	66	61	3.7	3.1	35	5
	32	13	124	71	64	60	3.6	2.7	30	4
	26	11	124	60	64	59	3.6	2.6	25	4
	25	7	124	54	64	58	3.5	2.5	20	4
	15	5	125	49	56	54	3.1	2.1	10	3
	12	1	96	34	48	0	2.1	1.0	4	2
	1	1	60	22	0	0	1.0	1.0	1	1

AGE 13

	RAW SCORES ARM HANG		SIT-UPS		BROAD JUMP		RAW SCORES 8-MINUTE RUN		PERCENTILE	STANINE
N=	79	98	79	96	74	99	111	99		
	M	F	M	F	M	F	M	F		
	114	68	130	150	95	83	5.2	5.0	99	9
	100	56	125	138	89	78	5.1	5.0	96	8
	85	42	125	125	85	76	5.0	4.7	90	8
	75	34	125	117	81	71	4.8	4.7	80	7
	70	30	125	108	81	70	4.6	4.7	75	6
	68	25	125	105	78	70	4.5	4.6	70	6
	64	22	125	105	77	68	4.4	4.6	65	6
	62	20	125	105	76	66	4.4	4.5	60	5
	57	18	125	105	74	64	4.4	4.4	50	5
	53	15	125	83	72	63	4.3	4.3	40	5
	50	13	125	79	70	61	4.2	4.0	35	5
	48	11	125	70	70	61	4.1	3.7	30	4
	45	10	125	60	69	59	4.1	3.7	25	4
	42	9	125	55	68	58	4.0	3.2	20	4
	32	2	125	39	65	54	3.6	3.0	10	3
	21	0	125	30	60	50	1.0	2.5	4	2
	4	0	80	21	45	0	1.0	1.5	1	1

AGE 14

	RAW SCORES ARM HANG		SIT-UPS		BROAD JUMP		RAW SCORES 12-MINUTE RUN		PERCENTILE	STANINE
N=	99	105	100	103	96	104	65	92		
	M	F	M	F	M	F	M	F		
	110	70	125	108	101	81	7.5	6.3	99	9
	94	67	125	105	94	78	7.4	6.1	96	8
	84	64	125	100	93	75	7.3	5.4	90	8
	74	36	125	100	86	72	7.1	5.2	80	7
	70	31	125	100	85	72	7.0	5.1	75	6
	67	28	125	100	83	70	6.6	5.0	70	6
	66	24	125	100	80	69	6.6	4.7	65	6
	65	22	125	100	79	67	6.5	4.7	60	5
	61	20	125	100	76	65	6.4	4.6	50	5
	58	17	125	100	74	64	6.3	4.4	40	5
	55	15	125	100	73	63	6.2	4.3	35	5
	52	14	125	80	71	62	6.2	4.2	30	4
	49	11	125	75	70	60	6.1	4.1	25	4
	44	10	125	50	68	59	6.0	3.5	20	4
	34	7	125	40	63	56	5.5	3.4	10	3
	26	4	115	26	58	55	5.2	3.2	4	2
	19	1	61	11	49	49	3.5	0	1	1

AGE 15

RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 12-MINUTE RUN		PERCENTILE	STANINE
N= 69	92	70	90	71	95	71	91		
M	F	M	F	M	F	M	F		
101	70	125	100	103	83	8.2	6.7	99	9
90	66	125	100	100	81	8.0	5.6	96	8
88	54	125	82	96	80	7.4	5.5	90	8
82	44	125	82	90	74	7.2	5.1	80	7
81	41	125	82	89	72	6.7	5.1	75	6
77	34	125	82	88	72	6.6	5.0	70	6
75	31	125	82	84	71	6.5	4.6	65	6
72	26	125	82	84	68	6.5	4.6	60	5
69	22	125	82	81	66	6.2	4.4	50	5
62	18	125	82	76	64	6.0	4.2	40	5
60	15	125	82	76	63	6.0	4.2	35	5
57	13	125	90	75	63	6.0	4.2	30	4
52	11	125	70	74	62	5.6	4.1	25	4
49	9	95	69	68	60	5.1	4.0	20	4
32	6	66	54	64	57	4.2	3.6	10	3
6	4	40	48	45	54	0	3.2	4	2
2	1	22	0	0	0	0	3.2	1	1

New Jersey, Oakhurst, Township of Ocean School District.
Instrument: Physical Fitness Level II
Ages: 6-17
Data Gathered By: Township of Ocean Staff

AGE 6

RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 200 YD. DASH		PERCENTILE	STANINE
Number of pupils tested—143									
M	F	M	F	M	F	M	F		
68	31	60	72	60	54	38	40	99	9
39	22	36	40	54	49	39	41	96	8
27	16	30	31	50	47	40	43	90	8
21	13	28	25	48	45	42	45	80	7
20	12	26	23	46	44	43	46	75	6
17	11	24	23	44	43	44	47	70	6
15	10	21	22	42	41	44	48	65	6
15	10	20	20	42	40	45	48	60	5
13	9	15	17	40	39	47	49	50	5
11	6	13	13	38	38	49	50	40	5
10	6	12	13	37	37	50	51	35	5
8	6	10	12	36	37	51	53	30	4
7	5	9	11	34	36	52	54	25	4
6	5	8	10	32	35	53	55	20	4
4	3	3	6	24	31	58	59	10	3
2	1	2	3	9	27	65	66	4	2
0	0	0	0	0	0	66	67	1	1

AGE 7

RAW SCORES				RAW SCORES					
ARM HANG		SIT-UPS		BROAD JUMP		200 YD. DASH		PERCENTILE	STANINE
Number of pupils tested—143									
M	F	M	F	M	F	M	F		
60	58	100	100	59	57	35	36	99	9
42	32	50	40	55	51	37	38	96	8
31	25	40	33	51	48	39	40	90	8
24	15	30	25	48	46	40	43	80	7
21	14	26	23	48	45	41	44	75	6
19	13	24	21	48	44	42	44	70	6
17	11	21	20	47	43	43	44	65	6
15	10	20	20	46	42	43	45	60	5
13	8	18	17	44	41	44	46	50	5
11	7	15	15	42	40	45	47	40	5
11	6	14	14	42	39	46	48	35	5
10	5	13	13	40	38	47	49	30	4
9	5	12	12	40	38	47	50	25	4
8	5	10	11	39	37	48	51	20	4
6	4	8	7	36	35	52	53	10	3
5	2	5	4	34	33	55	56	4	2
0	0	0	0	0	0	56	57	1	1

AGE 8

RAW SCORES				RAW SCORES					
ARM HANG		SIT-UPS		BROAD JUMP		200 YD. DASH		PERCENTILE	STANINE
Number of pupils tested—143									
M	F	M	F	M	F	M	F		
53	50	100	120	68	60	33	35	99	9
45	31	82	100	63	57	35	37	96	8
35	23	50	71	59	53	36	38	90	8
28	17	38	52	56	50	37	40	80	7
24	17	32	49	55	49	38	40	75	6
23	15	30	40	53	48	38	41	70	6
20	14	28	35	53	47	39	41	65	6
19	13	26	30	51	47	39	42	60	5
16	11	24	25	49	44	40	43	50	5
14	9	21	21	47	43	42	45	40	5
12	8	20	20	46	42	43	45	35	5
11	7	20	20	46	41	43	46	30	4
9	6	17	19	44	39	44	47	25	4
7	5	16	17	43	38	45	48	20	4
5	4	12	11	40	36	47	51	10	3
1	2	9	6	35	34	49	55	4	2
0	0	0	0	0	0	50	56	1	1

AGE 9

RAW SCORES						RAW SCORES			
ARM HANG		SIT-UPS		BROAD JUMP		200 YD. DASH		PERCENTILE	STANINE
Number of pupils tested—143									
M	F	M	F	M	F	M	F		
75	70	121	100	71	66	31	32	99	9
65	43	100	100	69	63	32	33	96	8
52	33	70	62	64	58	34	35	90	8
37	24	55	50	59	54	35	38	80	7
32	21	50	50	57	53	36	38	75	6
30	18	50	43	55	51	36	39	70	6
27	17	42	40	54	50	37	39	65	6
24	15	41	38	54	49	38	40	60	5
19	12	35	32	52	47	40	41	50	5
15	10	30	29	49	45	40	42	40	5
13	9	26	25	48	44	41	43	35	5
11	8	24	24	48	44	42	43	30	4
10	6	22	23	47	43	43	44	25	4
8	5	21	22	45	41	44	45	20	4
5	4	16	18	43	38	46	47	10	3
2	2	10	7	37	35	50	49	4	2
0	0	0	0	0	0	51	50	1	1

AGE 10

RAW SCORES						RAW SCORES			
ARM HANG		SIT-UPS		BROAD JUMP		200 YD. DASH		PERCENTILE	STANINE
Number of pupils tested—143									
M	F	M	F	M	F	M	F		
80	67	125	121	70	67	30	30	99	9
69	50	100	100	65	64	32	32	96	8
57	40	89	85	63	61	33	33	90	8
41	25	55	63	60	56	34	35	80	7
37	23	52	57	59	56	35	36	75	6
32	20	50	50	58	55	35	36	70	6
29	17	50	45	57	54	36	37	65	6
25	15	45	42	55	53	36	37	60	5
20	12	38	40	53	51	37	38	50	5
16	10	32	32	51	49	38	39	40	5
14	10	30	30	50	49	38	39	35	5
13	9	28	27	49	48	39	40	30	4
10	7	24	25	48	47	40	41	25	4
8	6	21	23	48	44	41	42	20	4
5	4	18	20	44	41	44	44	10	3
1	2	13	15	41	37	47	50	4	2
0	0	0	0	0	0	48	51	1	1

AGE 13

RAW SCORES				RAW SCORES					
ARM HANG		SIT-UPS		BROAD JUMP		200 YD. DASH		PERCENTILE	STANINE
Number of pupils tested—143									
M	F	M	F	M	F	M	F		
90	83	125	125	76	74	30	30	99	9
83	58	125	125	74	72	31	33	96	8
64	38	90	100	70	70	32	34	90	8
45	31	70	63	67	67	33	36	80	7
42	26	68	68	65	64	34	36	75	6
39	24	64	60	64	63	34	37	70	6
35	21	60	58	64	62	35	37	65	6
33	19	54	51	63	61	35	38	60	5
27	15	50	50	62	60	36	39	50	5
22	13	47	40	60	58	37	39	40	5
20	12	43	36	58	57	38	40	35	5
18	10	37	35	58	55	38	41	30	4
14	8	32	30	55	54	39	42	25	4
12	7	30	30	52	52	40	43	20	4
8	4	25	22	50	48	41	45	10	3
2	2	21	17	42	46	44	49	4	2
0	0	0	0	0	0	47	51	1	1

AGE 12

RAW SCORES				RAW SCORES					
ARM HANG		SIT-UPS		BROAD JUMP		8-MINUTE RUN		PERCENTILE	STANINE
Number of pupils tested—143									
M	F	M	F	M	F	M	F		
86	65	125	117	80	82	5.0	4.1	99	9
74	60	125	100	76	75	4.7	4.0	96	8
62	45	122	80	73	72	4.4	3.6	90	8
45	34	101	69	72	69	4.3	3.4	80	7
42	31	90	64	70	68	4.2	3.3	75	6
39	31	75	60	69	67	4.1	3.3	70	6
35	25	68	55	67	67	4.0	3.2	65	6
32	23	65	52	66	66	4.0	3.2	60	5
28	18	60	50	64	63	3.7	3.1	50	5
23	14	55	45	62	62	3.5	3.0	40	5
20	13	51	43	61	60	3.4	3.0	35	5
19	12	43	40	60	59	3.4	2.6	30	4
17	10	40	40	60	58	3.2	2.6	25	4
16	9	35	35	58	56	3.1	2.4	20	4
8	5	27	28	52	51	3.0	2.3	10	3
5	4	20	22	48	47	2.7	2.2	4	2
0	0	0	0	0	0	2.4	2.1	1	1

AGE 13

RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 8-MINUTE RUN		PERCENTILE	STANINE
Number of pupils tested—143									
M	F	M	F	M	F	M	F		
94	65	125	105	89	78	5.6	4.1	99	9
79	60	125	100	83	77	5.0	3.6	96	8
64	40	125	80	78	73	4.7	3.5	90	8
51	33	100	60	73	71	4.4	3.4	80	7
45	29	100	59	72	70	4.4	3.3	75	6
43	28	87	52	72	69	4.3	3.2	70	6
39	26	77	50	72	68	4.2	3.1	65	6
37	23	72	50	71	68	4.2	3.1	60	5
30	0	50	45	69	65	4.1	3.0	50	5
24	5	50	40	65	62	4.0	2.7	40	5
21	13	49	37	65	61	3.7	2.7	35	5
20	12	45	35	63	60	3.6	2.6	30	4
17	10	40	32	62	60	3.5	2.5	25	4
13	10	38	30	60	58	3.4	2.4	20	4
9	5	31	25	58	56	3.3	2.4	10	3
6	4	25	20	51	51	3.0	2.1	4	2
0	0	0	0	0	0	2.4	1.7	1	1

AGE 14

RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 12-MINUTE RUN		PERCENTILE	STANINE
Number of pupils tested—163									
M	F	M	F	M	F	M	F		
103	75	125	100	96	84	8.1	6.3	99	9
82	57	120	70	94	80	7.5	5.6	96	8
75	45	101	55	84	75	7.3	5.3	90	8
65	34	100	49	81	72	6.7	4.7	80	7
62	32	100	45	80	71	6.6	4.6	75	6
55	29	86	42	78	70	6.4	4.6	70	6
49	24	85	40	76	68	6.4	4.3	65	6
48	22	79	35	75	67	6.3	4.2	60	5
44	19	66	31	73	66	6.0	4.0	50	5
38	15	60	26	72	64	5.7	3.7	40	5
36	15	60	25	71	63	5.5	3.7	35	5
34	13	55	23	69	62	5.4	3.5	30	4
27	11	50	21	67	60	5.3	3.3	25	4
24	8	50	20	65	59	5.2	3.0	20	4
15	5	35	15	61	55	4.6	2.7	10	3
8	1	26	12	58	51	3.7	2.0	4	2
0	0	0	0	0	0	3.4	1.9	1	1

AGE 15

RAW SCORES				RAW SCORES					
ARM HANG		SIT-UPS		BROAD JUMP		12-MINUTE RUN		PERCENTILE	STANINE
Number of pupils tested—209									
M	F	M	F	M	F	M	F		
126	70	125	90	100	89	8.5	8.1	99	9
105	58	121	71	96	80	7.4	6.0	96	8
86	37	110	67	91	77	6.7	5.6	90	8
73	30	101	50	87	72	6.4	5.1	80	7
68	28	100	45	86	71	6.3	5.0	75	6
65	25	100	42	84	70	6.2	4.7	70	6
61	24	100	40	84	69	6.0	4.7	65	6
60	22	100	40	83	68	5.7	4.7	60	5
54	18	80	35	80	66	5.7	4.5	50	5
48	15	70	30	78	64	5.4	4.3	40	5
46	13	65	30	77	63	5.3	4.2	35	5
43	12	60	30	76	62	5.2	4.1	30	4
38	10	55	28	75	60	5.1	4.1	25	4
34	8	54	26	73	59	4.7	4.0	20	4
22	5	45	20	70	54	4.3	3.6	10	3
15	4	32	12	66	52	3.6	3.1	4	2
0	0	0	0	0	0	3.1	2.1	1	1

AGE 16

RAW SCORES				RAW SCORES					
ARM HANG		SIT-UPS		BROAD JUMP		12-MINUTE RUN		PERCENTILE	STANINE
Number of pupils tested—									
M	F	M	F	M	F	M	F		
121	75	120	81	105	84	8.0	6.4	99	9
109	51	115	70	99	77	7.3	5.5	96	8
85	37	101	51	94	74	7.0	5.3	90	8
78	30	100	50	90	70	6.6	5.0	80	7
74	26	95	45	88	69	6.4	4.7	75	6
70	22	80	40	86	67	6.2	4.7	70	6
68	20	75	40	86	66	6.1	4.5	65	6
65	19	75	40	84	65	6.0	4.4	60	5
58	16	60	36	83	63	5.7	4.3	50	5
50	12	55	33	80	61	4.6	4.2	40	5
48	11	50	30	80	60	5.5	4.1	35	5
42	10	50	30	77	59	5.3	4.0	30	4
40	9	45	29	75	57	5.2	4.0	25	4
38	8	40	25	74	56	4.6	3.7	20	4
28	5	33	23	71	52	4.2	3.5	10	3
19	1	25	20	65	48	3.6	2.5	4	2
0	0	0	0	0	0	3.0	1.3	1	1

AGE 17

RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 12-MINUTE RUN		PERCENTILE	STANINE
Number of pupils tested–181									
M	F	M	F	M	F	M	F		
120	61	125	80	106	88	8.2	6.4	99	9
112	42	115	60	101	78	7.7	5.4	96	8
87	27	102	50	96	75	7.3	5.2	90	8
79	22	100	50	93	75	6.7	4.6	80	7
75	19	95	47	92	72	6.7	4.6	75	6
71	18	90	45	90	71	6.5	4.3	70	6
68	16	81	41	90	70	6.3	4.3	65	6
64	15	76	40	89	69	6.3	4.3	60	5
60	14	70	35	87	67	6.0	4.1	50	5
54	12	65	30	84	66	5.7	4.0	40	5
48	11	60	30	84	65	5.6	4.0	35	5
45	10	52	30	82	63	5.4	3.7	30	4
41	10	51	30	81	63	5.1	3.7	25	4
40	8	50	25	79	60	4.7	3.7	20	4
31	5	40	20	75	55	4.6	3.4	10	3
25	3	25	12	70	48	3.5	3.2	4	2
0	0	0	0	0	0	3.0	2.4	1	1

New Jersey, Rutherford, Rutherford School District.
Instrument: Physical Fitness Level II
Ages: 6–11
Data Gathered By: Debbie Cordasco

AGE 6

RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 200 YD. DASH		PERCENTILE	STANINE
N= 69	60	71	60	68	60	56	53		
M	F	M	F	M	F	M	F		
25	60	44	40	52	51	36	39	99	9
18	26	40	38	51	50	37	40	96	8
15	16	35	36	47	44	40	41	90	8
13	12	30	26	45	42	43	44	80	7
12	10	27	25	44	41	44	45	75	6
10	10	25	23	42	38	45	47	70	6
9	10	23	22	42	38	46	49	65	6
8	9	22	21	41	38	46	50	60	5
7	8	21	20	39	36	49	53	50	5
7	6	18	18	36	35	51	55	40	5
6	5	18	17	36	34	54	55	35	5
5	4	16	16	35	32	55	56	30	4
3	4	15	15	34	31	56	58	25	4
3	3	14	15	32	31	57	58	20	4
1	0	10	10	29	29	62	62	10	3
0	0	5	0	24	24	65	64	4	2
0	0	0	0	18	18	70	68	1	1

AGE 7

	RAW SCORES				RAW SCORES					
	ARM HANG		SIT-UPS		BROAD JUMP		200 YD. DASH		PERCENTILE	STANINE
N=	84	93	83	96	84	92	71	85		
	M	F	M	F	M	F	M	F		
	31	39	42	48	54	51	34	36	99	9
	29	34	39	44	52	51	35	37	96	8
	23	19	35	35	50	48	36	38	90	8
	15	12	27	30	48	47	40	41	80	7
	13	10	26	28	46	46	40	41	75	6
	12	9	24	27	44	45	41	43	70	6
	11	8	22	26	44	44	43	43	65	6
	10	7	21	24	42	44	43	43	60	5
	9	6	19	20	42	42	45	45	50	5
	7	5	17	19	40	40	46	47	40	5
	6	4	16	18	40	39	47	49	35	5
	6	4	13	17	39	39	48	50	30	4
	5	3	13	16	36	37	49	51	25	4
	5	3	13	16	36	36	50	52	20	4
	2	1	11	11	34	34	54	55	10	3
	0	1	8	9	32	29	58	60	4	2
	0	0	3	2	31	27	58	60	1	1

AGE 8

	RAW SCORES				RAW SCORES					
	ARM HANG		SIT-UPS		BROAD JUMP		200 YD. DASH		PERCENTILE	STANINE
N=	84	93	83	96	84	92	71	85		
	M	F	M	F	M	F	M	F		
	45	33	64	47	70	63	31	32	99	9
	40	24	45	42	67	62	31	33	96	8
	32	18	41	36	60	56	33	36	90	8
	25	11	35	33	54	53	33	37	80	7
	22	10	34	32	54	50	34	38	75	6
	20	9	33	30	53	48	35	38	70	6
	16	8	31	29	52	47	36	38	65	6
	14	8	30	28	51	46	36	39	60	5
	12	6	28	26	49	42	38	40	50	5
	9	5	26	24	47	41	40	41	40	5
	8	5	25	24	45	40	41	42	30	4
	6	4	25	23	44	38	42	44	30	4
	5	3	24	21	43	38	43	45	25	4
	4	3	21	21	42	36	44	45	20	4
	2	0	15	19	38	34	48	50	10	3
	0	0	11	8	34	30	54	53	4	2
	0	0	6	4	27	25	58	57	1	1

AGE 9

	RAW SCORES ARM HANG		SIT-UPS		RAW SCORES BROAD JUMP		200 YD. DASH		PERCENTILE	STANINE
N=	107	88	106	97	112	96	101	95		
	M	F	M	F	M	F	M	F		
	70	40	62	50	69	72	28	31	99	9
	53	36	48	43	65	65	29	32	96	8
	37	26	42	39	62	60	31	34	90	8
	29	19	39	36	59	55	34	35	80	7
	28	17	38	34	58	53	35	36	75	6
	22	16	37	33	56	53	35	36	70	6
	21	15	36	32	56	51	36	37	65	6
	19	14	35	30	54	50	37	37	60	5
	15	12	33	29	52	49	38	38	50	5
	11	8	31	28	51	48	39	40	40	5
	10	8	30	27	49	47	40	40	35	5
	9	7	29	26	48	46	41	41	30	4
	7	6	29	26	48	45	41	42	25	4
	6	5	27	25	46	45	42	43	20	4
	4	1	24	23	41	42	44	48	10	3
	0	0	20	18	34	36	45	50	4	2
	0	0	18	17	33	32	48	57	1	1

AGE 10

	RAW SCORES ARM HANG		SIT-UPS		RAW SCORES BROAD JUMP		200 YD. DASH		PERCENTILE	STANINE
N=	115	81	112	101	111	110	115	101		
	M	F	M	F	M	F	M	F		
	65	59	54	50	74	73	29	28	99	9
	47	54	52	48	72	68	30	30	96	8
	41	31	49	42	66	63	31	33	90	8
	32	18	46	38	63	59	32	35	80	7
	28	15	44	36	61	57	32	36	75	6
	26	13	43	36	61	55	33	36	70	6
	23	12	41	35	60	54	34	37	65	6
	20	11	40	35	59	54	35	37	60	5
	16	9	37	32	56	53	36	38	50	5
	12	6	35	30	53	50	37	40	40	5
	11	5	34	29	52	49	37	40	35	5
	10	5	32	28	51	48	38	41	30	4
	8	4	31	28	49	48	39	41	25	4
	7	4	30	27	47	46	40	41	20	4
	5	1	27	23	42	40	42	44	10	3
	3	0	21	21	38	36	47	45	4	2
	0	0	12	14	31	26	54	47	1	1

AGE 11

	RAW SCORES				RAW SCORES					
	ARM HANG		SIT-UPS		BROAD JUMP		200 YD. DASH		PERCENTILE	STANINE
N=	114	85	120	83	122	87	121	87		
	M	F	M	F	M	F	M	F		
	68	63	77	52	76	77	28	27	99	9
	7[illegible]	56	63	50	72	71	28	29	96	8
	61	34	55	45	70	66	29	31	90	8
	48	25	49	40	67	63	30	32	80	7
	44	23	47	40	66	61	31	33	75	6
	39	22	46	39	65	60	32	34	70	6
	35	22	44	38	64	59	32	34	65	6
	29	18	4[illegible]	37	62	58	32	35	60	5
	22	14	40	36	60	55	33	35	50	5
	20	10	38	34	56	54	34	36	40	5
	18	9	35	33	56	53	35	37	35	5
	16	8	34	32	5[illegible]	52	35	38	30	4
	15	6	34	32	53	5[illegible]	36	38	25	4
	13	5	32	30	52	48	36	38	20	4
	8	3	28	27	48	44	37	41	10	3
	5	1	24	23	45	34	41	45	4	2
	1	0	20	21	43	29	44	45	1	1

Testing Sequence: Demonstrate; provide assistance; have the child perform.

State Norms

New Jersey

Instrument: Physical Fitness Level II

Ages: 5–17

Data Gathered By: ACTIVE Office

AGE 6

	RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	107	94	105	72	99	73	126	133		
	M	F	M	F	M	F	M	F		
	26	27	43	30	46	42	44	50	99	9
	22	25	30	28	42	41	49	50	96	8
	18	25	28	22	38	38	53	56	90	8
	11	12	28	16	36	36	57	58	80	7
	8	10	22	13	35	35	57	59	75	6
	7	7	22	10	33	34	57	60	70	6
	7	7	20	10	33	32	57	60	65	6
	6	6	19	9	32	32	57	60	60	5
	5	5	15	6	31	29	60	63	50	5
	3	3	12	5	28	28	63	65	40	5
	3	3	12	5	28	27	64	65	35	5
	2	2	11	4	27	26	65	66	30	4
	2	2	11	4	26	25	66	67	25	4
	2	2	10	3	26	24	67	69	20	4
	1	1	9	3	22	22	72	72	10	3
	1	0	3	3	20	20	72	72	4	2
	1	0	0	2	13	16	72	72	1	1

COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI
4	10	12	30	20	50	28	70
5	13	13	33	21	53	29	73
6	15	14	35	22	55	30	75
7	18	15	38	23	58	31	78
8	20	16	40	24	60	32	80
9	23	17	43	25	63	33	83
10	25	18	45	26	65	34	85
11	28	19	48	27	68	35	88
						36	90

AGE 6

Number of Pupils Tested	RAW SCORES ARM HANG		SIT-UPS		BROAD JUMP		200 YD. DASH		PERCENTILE	STANINE
	423	341	409	279	337	225	294	206		
	M	F	M	F	M	F	M	F		
	65	80	99	59	56	56	35	34	99	9
	43	25	70	50	51	52	37	37	96	8
	26	20	47	37	48	49	38	40	90	8
	18	14	35	30	45	46	41	42	80	7
	17	12	30	26	45	44	43	44	75	6
	15	10	28	24	44	44	43	45	70	6
	13	9	25	21	43	43	44	45	65	6
	12	8	23	20	42	42	45	46	60	5
	10	7	20	19	40	39	47	48	50	5
	8	6	18	16	38	36	48	51	40	5
	7	5	16	15	36	36	50	52	35	5
	6	4	15	13	36	34	51	54	30	4
	5	4	13	11	35	33	52	55	25	4
	4	4	12	10	34	31	55	55	20	4
	2	2	8	6	28	29	59	58	10	3
	0	1	4	3	24	23	65	61	4	2
	0	0	0	0	12	18	70	64	1	1

AGE 7

Number of Pupils Tested	RAW SCORES ARM HANG		SIT UPS		BROAD JUMP		200 YD. DASH		PERCENTILE	STANINE
	445	430	406	272	409	365	362	333		
	M	F	M	F	M	F	M	F		
	83	90	101	33	62	60	33	35	99	9
	45	52	80	31	60	54	35	37	96	8
	29	32	50	29	55	51	36	39	90	8
	20	20	37	27	51	48	40	42	80	7
	18	17	32	25	50	47	40	43	75	6
	15	14	30	24	49	46	41	44	70	6
	15	12	27	23	48	45	42	45	65	6
	13	11	25	21	47	44	43	45	60	5
	10	8	21	19	45	42	45	47	50	5
	8	7	19	17	42	40	46	50	40	5
	7	6	17	15	41	39	47	51	35	5
	6	5	15	14	40	38	48	53	30	4
	5	4	13	12	39	37	49	53	25	4
	5	3	12	10	38	36	51	55	20	4
	2	1	10	6	35	33	55	63	10	3
	1	0	5	2	29	29	58	72	4	2
	0	0	0	0	21	22	60	76	1	1

AGE 8

	RAW SCORES				RAW SCORES					
	ARM HANG		SIT-UPS		BROAD JUMP		200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	452	450	406	374	456	348	351	282		
	M	F	M	F	M	F	M	F		
	72	85	120	105	70	70	30	33	99	9
	62	60	100	90	65	62	32	34	96	8
	50	36	74	60	60	59	33	36	90	8
	39	23	60	40	55	54	35	38	80	7
	34	18	48	36	54	52	36	38	75	6
	30	16	41	33	52	51	37	40	70	6
	25	14	38	31	51	49	38	40	65	6
	21	11	35	30	50	48	39	41	60	5
	14	9	28	25	48	47	41	49	59	5
	11	7	25	20	45	44	43	46	40	5
	10	6	23	20	44	43	44	47	35	5
	10	5	20	19	43	42	45	48	30	4
	8	5	19	16	42	41	46	50	25	4
	6	4	14	14	40	39	48	53	20	4
	3	2	9	8	35	37	53	62	10	3
	1	1	5	5	30	30	60	69	4	2
	0	0	3		27	28	66	74	1	1

AGE 9

	RAW SCORES				RAW SCORES					
	ARM HANG		SIT-UPS		BROAD JUMP		200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	387	325	340	291	299	282	309	247		
	M	F	M	F	M	F	M	F		
	96	80	101	100	69	69	30	31	99	9
	76	60	90	99	66	64	31	33	96	8
	62	40	65	65	64	60	33	34	90	8
	46	26	52	47	59	54	34	36	80	7
	40	22	50	39	58	52	34	36	75	6
	35	20	46	37	56	51	34	37	70	6
	31	17	40	34	55	51	36	37	65	6
	29	16	39	32	53	50	36	38	60	5
	22	13	34	30	51	48	38	40	50	5
	16	10	30	27	49	46	40	42	40	5
	15	9	30	25	48	45	41	44	35	5
	12	8	27	23	47	45	42	46	30	4
	11	7	25	20	45	44	43	48	25	4
	9	6	22	18	44	42	44	50	20	4
	5	4	16	10	37	38	48	57	10	3
	1	1	10	5	29	33	53	65	4	2
	0	0	7	3	18	28	60	69	1	1

AGE 10

	ARM HANG		SIT-UPS		BROAD JUMP		200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	318	290	268	277	307	255	221	241		
	M	F	M	F	M	F	M	F		
	88	65	121	81	76	72	30	29	99	9
	50	49	106	72	73	68	31	31	96	8
	39	41	100	50	68	63	32	33	90	8
	30	27	60	43	63	59	34	34	80	7
	25	25	50	39	60	57	35	35	75	6
	22	20	48	38	60	55	36	36	70	6
	20	17	46	35	58	54	37	36	65	6
	17	13	43	32	56	53	38	37	60	5
	13	11	39	29	54	51	38	38	50	5
	10	9	35	27	51	49	42	39	40	5
	9	7	32	26	49	48	43	40	35	5
	7	6	30	25	48	47	45	40	30	4
	7	5	30	23	47	45	47	41	25	4
	5	4	27	22	45	42	48	42	20	4
	4	2	20	14	42	39	56	46	10	3
	2	0	7	4	32	34	59	56	4	2
	0	0	1	3	22	28	64	61	1	1

AGE 11

	RAW SCORES				RAW SCORES					
	ARM HANG		SIT-UPS		BROAD JUMP		200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	395	407	416	348	370	324	294	292		
	M	F	M	F	M	F	M	F		
	95	71	151	150	78	72	28	28	99	9
	74	58	150	150	75	68	28	30	96	8
	62	42	130	150	71	64	29	32	90	8
	47	33	103	100	66	62	31	33	80	7
	39	30	85	73	65	61	31	34	75	6
	34	25	67	60	64	60	32	35	70	6
	30	22	59	50	63	59	32	35	65	6
	24	20	53	45	62	57	33	35	60	5
	20	15	47	38	59	54	34	37	50	5
	15	11	40	35	56	51	35	39	40	5
	14	9	37	32	54	50	35	40	35	5
	12	8	34	30	52	49	36	40	30	4
	11	7	31	30	50	48	37	41	25	4
	9	6	29	26	48	46	38	43	20	4
	5	4	19	18	40	42	41	48	10	3
	2	2	9	10	26	36	45	53	4	2
	0	1	2	3	21	31	54	62	1	1

AGE 12

Number of Pupils Tested	RAW SCORES ARM HANG		SIT-UPS		RAW SCORES BROAD JUMP		8-MINUTE RUN		PERCENTILE	STANINE
	228	205	249	187	240	197	274	103		
	M	F	M	F	M	F	M	F		
	90	70	150	200	85	74	6.3	5.5	99	9
	87	65	150	200	80	73	5.3	5.3	96	8
	75	49	130	130	76	71	4.5	5.1	90	8
	65	34	125	117	72	69	4.2	4.4	80	7
	61	31	125	117	71	67	4.1	4.2	75	6
	55	27	125	117	69	66	3.7	4.2	70	6
	49	24	125	101	68	64	3.7	4.1	65	6
	44	23	105	80	67	63	3.5	4.0	60	5
	32	19	90	60	64	60	3.4	3.6	50	5
	24	14	71	50	61	58	3.2	3.4	40	5
	21	13	61	44	59	57	3.1	3.3	35	5
	18	11	54	40	56	56	3.0	3.2	30	4
	16	9	46	34	53	54	2.7	3.2	25	4
	13	7	41	30	50	52	2.7	3.1	20	4
	7	5	26	20	40	49	2.6	2.6	10	3
	1	2	14	10	24	43	2.5	2.4	4	2
	0	1	1	1	17	38	2.5	2.3	1	1

AGE 13

Number of Pupils Tested	RAW SCORES ARM HANG		SIT-UPS		RAW SCORES BROAD JUMP		8-MINUTE RUN		PERCENTILE	STANINE
	139	159	164	177	143	165	117	167		
	M	F	M	F	M	F	M	F		
	114	75	130	130	95	78	6.2	5.4	99	9
	100	66	125	125	85	78	5.5	5.1	96	8
	91	55	125	117	82	76	4.7	4.7	90	8
	85	42	125	105	78	72	4.3	4.2	80	7
	80	37	125	105	76	71	4.1	3.7	75	6
	75	34	125	100	75	70	3.7	3.5	70	6
	71	30	125	100	74	68	3.5	3.4	65	6
	70	25	125	84	72	68	3.3	3.3	60	5
	62	20	100	72	70	65	3.2	3.2	50	5
	56	18	84	60	67	64	3.1	3.1	40	5
	53	17	75	55	66	63	3.0	3.0	35	5
	50	15	69	50	63	61	2.7	2.7	30	4
	48	14	62	40	61	60	2.7	2.6	25	4
	43	12	55	38	50	59	2.6	2.5	20	4
	32	10	25	20	35	54	2.5	2.4	10	3
	14	5	15	10	31	47	2.0	2.1	4	2
	0	1	3	4	22	38	1.6	1.7	1	1

AGE 14

	RAW SCORES				RAW SCORES					
	ARM HANG		SIT-UPS		BROAD JUMP		12-MINUTE RUN		PERCENTILE	STANINE
Number of Pupils Tested	468	543	429	316	406	203	260	247		
	M	F	M	F	M	F	M	F		
	110	70	136	126	96	72	8.6	6.7	99	9
	88	64	134	105	88	72	8.4	6.0	96	8
	71	50	125	96	84	72	7.5	5.0	90	8
	63	43	110	73	80	70	6.4	4.7	80	7
	60	40	100	65	78	69	6.1	4.4	75	6
	56	36	95	41	76	68	5.7	4.1	70	6
	51	24	85	35	75	68	5.6	4.0	65	6
	48	30	74	30	74	66	5.2	3.7	60	5
	40	24	60	25	71	64	4.7	3.5	50	5
	34	20	52	20	66	62	4.4	3.2	40	5
	31	18	50	17	64	62	4.3	3.0	35	5
	28	16	41	15	62	61	4.1	3.0	30	4
	25	15	35	14	60	60	4.0	2.7	25	4
	22	13	31	11	57	58	3.4	2.6	20	4
	15	9	23	9	38	53	3.3	2.4	10	3
	10	5	12	4	26	44	3.0	2.1	4	2
	4	4	4	1	20	37	2.4	1.7	1	1

AGE 15

	RAW SCORES				RAW SCORES					
	ARM HANG		SIT-UPS		BROAD JUMP		12-MINUTE RUN		PERCENTILE	STANINE
Number of Pupils Tested	389	388	384	397	355	293	295	291		
	M	F	M	F	M	F	M	F		
	115	70	150	107	97	75	9.0	6.3	99	9
	90	61	130	82	93	74	8.5	5.5	96	8
	81	44	120	68	90	72	8.3	5.3	90	8
	73	35	100	56	86	70	8.1	5.0	80	7
	70	30	100	50	85	70	8.0	4.7	75	6
	68	28	90	50	82	69	7.6	4.6	70	6
	63	25	82	50	81	68	7.4	4.5	65	6
	60	22	80	46	80	67	7.2	4.4	60	5
	54	19	73	40	77	65	6.7	4.2	50	5
	48	16	66	35	74	63	6.3	4.0	40	5
	44	15	60	31	72	62	6.2	3.7	35	5
	41	12	58	30	69	61	6.0	3.6	30	4
	36	12	51	26	66	60	5.7	3.4	25	4
	32	10	43	24	65	59	5.4	3.1	20	4
	20	8	25	15	55	52	4.7	2.7	10	3
	14	5	15	9	33	45	3.5	2.4	4	2
	3	3	4	4	25	36	3.0	1.7	1	1

AGE 16

	RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 12-MINUTE RUN		PERCENTILE	STANINE
Number of Pupils Tested	238	298	310	316	293	287	270	270		
	M	F	M	F	M	F	M	F		
	130	66	189	118	102	85	9.1	6.4	99	9
	120	50	150	105	100	82	8.7	5.5	96	8
	100	38	138	95	96	77	8.4	5.3	90	8
	72	31	122	65	90	73	7.6	5.0	80	7
	71	29	110	57	88	72	7.2	4.7	75	6
	66	26	101	50	87	70	6.5	4.7	70	6
	62	24	100	50	86	69	6.1	4.5	65	6
	60	23	100	50	84	68	6.0	4.4	60	5
	54	19	84	50	83	66	5.7	4.3	50	5
	48	15	73	42	80	63	5.6	4.2	40	5
	46	14	66	40	79	63	5.5	4.1	35	5
	43	12	62	38	77	62	5.3	4.0	30	4
	40	11	58	35	75	61	5.2	4.0	25	4
	37	10	53	32	73	60	4.6	3.7	20	4
	28	7	45	27	69	57	4.2	3.5	10	3
	20	5	38	18	63	52	3.6	2.5	4	2
	10	5	30	7	42	47	3.0	1.3	1	1

AGE 17

	RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 12-MINUTE RUN		PERCENTILE	STANINE
Number of Pupils Tested	213	194	202	225	209	211	182	181		
	M	F	M	F	M	F	M	F		
	135	64	198	100	104	83	8.3	6.4	99	9
	122	46	140	75	102	79	8.1	5.4	96	8
	105	36	130	65	100	76	7.5	5.2	90	8
	86	30	125	53	96	72	7.2	4.6	80	7
	80	28	118	50	96	72	6.7	4.6	75	6
	75	24	102	50	94	70	6.5	4.3	70	6
	72	21	100	50	91	69	6.4	4.3	65	6
	70	19	98	49	90	69	6.3	4.3	60	5
	62	16	83	42	87	67	6.0	4.1	50	5
	59	13	72	40	84	64	5.7	4.0	40	5
	54	10	68	35	83	63	5.6	4.0	35	5
	50	9	64	31	82	62	5.4	3.7	30	4
	48	8	57	30	80	61	5.1	3.7	25	4
	45	7	52	30	79	60	4.7	3.7	20	4
	31	4	40	20	72	56	4.6	3.4	10	3
	23	3	30	15	62	50	3.5	3.2	4	2
	12	2	21	4	40	30	3.0	2.4	1	1

National Norms

United States

Instrument: Physical Fitness Level II

Ages: 6–16

Data Gathered By: ACTIVE Office

AGE 6

	RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	615	490	549	385	505	346	406	355		
	M	F	M	F	M	F	M	F		
	68	75	99	81	65	56	38	36	99	9
	59	49	70	55	52	50	39	37	96	8
	38	40	51	47	49	49	40	40	90	8
	24	20	40	36	46	45	42	42	80	7
	22	16	35	31	45	44	43	44	75	6
	21	14	30	30	44	43	44	44	70	6
	18	12	27	26	43	42	44	45	65	6
	16	11	25	23	42	40	45	46	60	5
	12	8	21	20	40	39	47	48	50	5
	10	7	18	18	37	36	48	51	40	5
	9	9	17	16	36	36	49	52	35	5
	7	5	15	14	35	34	51	54	30	4
	7	5	14	13	34	32	51	55	25	4
	6	4	12	10	31	30	54	58	20	4
	3	3	7	6	26	28	60	68	10	3
	1	1	2	3	20	24	71	87	4	2
	0	0	0	0	4	18	100	110	1	1

AGE 7

	RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	619	584	584	491	558	483	517	494		
	M	F	M	F	M	F	M	F		
	99	96	108	150	76	60	31	32	99	9
	52	60	80	100	55	55	34	35	96	8
	43	47	54	61	53	52	36	38	90	8
	30	30	44	48	50	49	38	41	80	7
	25	24	40	40	49	48	38	42	75	6
	22	20	35	39	48	47	39	43	70	6
	19	17	31	35	48	46	40	43	65	6
	16	14	29	32	46	45	41	44	60	5
	13	11	24	26	44	43	43	46	50	5
	10	8	20	22	42	42	46	48	40	5
	9	8	18	20	40	40	46	49	35	5
	8	6	16	18	39	39	47	50	30	4
	7	6	14	16	38	38	49	52	25	4
	6	5	12	14	36	37	50	53	20	4
	4	2	10	9	32	35	55	61	10	3
	2	1	5	7	21	28	58	76	4	2
	1	0	0	0	7	22	60	88	1	1

AGE 8

	RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	622	627	568	522	641	292	473	436		
	M	F	M	F	M	F	M	F		
	95	96	150	125	70	70	30	32	99	9
	67	60	107	90	63	62	32	34	96	8
	58	50	68	66	59	59	33	36	90	8
	43	34	59	47	55	56	36	38	80	7
	40	25	52	41	53	55	36	38	75	6
	35	21	50	37	52	53	37	39	70	6
	31	17	43	34	51	52	38	40	65	6
	27	16	40	31	50	51	39	41	60	5
	21	12	32	27	48	49	41	43	50	5
	16	9	27	22	45	46	43	45	40	5
	13	8	25	20	44	44	45	46	35	5
	11	7	22	20	43	42	46	47	30	4
	10	6	20	17	41	40	47	49	25	4
	9	5	16	15	38	39	48	52	20	4
	5	2	10	9	32	32	53	60	10	3
	1	1	6	5	25	26	57	72	4	2
	0	0	3	1	7	24	60	104	1	1

AGE 9

	RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	623	535	422	520	497	299	531	446		
	M	F	M	F	M	F	M	F		
	96	83	150	150	72	90	28	30	99	9
	75	60	150	125	66	70	29	32	96	8
	64	51	114	100	63	63	31	34	90	8
	50	36	82	66	59	59	32	35	80	7
	46	29	70	60	58	58	33	36	75	6
	40	26	60	50	57	57	33	36	70	6
	37	22	56	47	57	56	34	37	65	6
	32	19	52	39	55	55	35	37	60	5
	27	15	48	33	53	53	36	48	50	5
	20	12	40	29	50	51	38	40	40	5
	16	10	26	26	49	51	39	41	35	5
	15	9	25	24	48	50	40	42	30	4
	13	7	22	20	45	48	41	43	25	4
	10	6	20	17	43	47	43	45	20	4
	5	4	13	9	29	43	46	52	10	3
	3	2	7	6	25	39	49	64	4	2
	0	0	4	3	9	24	53	94	1	1

AGE 10

	RAW SCORES									
	ARM HANG		SIT-UPS		BROAD JUMP		200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	514	467	423	499	462	610	337	399		
	M	F	M	F	M	F	M	F		
	133	82	150	150	77	90	29	30	99	9
	78	60	150	129	72	70	30	31	96	8
	55	45	125	125	68	65	32	33	90	8
	41	33	100	80	64	60	32	34	80	7
	37	27	96	70	62	59	33	35	75	6
	32	25	80	60	60	56	33	35	70	6
	28	20	62	54	60	55	34	36	65	6
	24	18	52	50	59	54	34	36	60	5
	18	12	47	40	55	51	36	37	50	5
	13	10	39	32	54	48	37	38	40	5
	11	9	36	29	52	47	38	39	35	5
	9	7	34	28	51	45	38	40	30	4
	7	6	31	25	48	42	40	40	25	4
	6	5	30	22	47	40	42	41	20	4
	4	4	20	14	42	36	45	44	10	3
	3	1	7	5	28	32	48	60	4	2
	0	0	1	3	5	28	50	88	1	1

AGE 11

	RAW SCORES									
	ARM HANG		SIT-UPS		BROAD JUMP		200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	360	600	556	466	547	457	463	449		
	M	F	M	F	M	F	M	F		
	80	71	161	150	78	76	27	28	99	9
	52	65	150	150	75	70	28	30	96	8
	40	56	150	150	74	67	29	31	90	8
	32	40	125	88	69	64	30	32	80	7
	21	35	112	70	66	63	31	33	75	6
	20	31	103	60	65	62	31	33	70	6
	18	28	98	52	65	61	32	34	65	6
	17	23	79	47	64	60	32	35	60	5
	14	18	58	39	61	58	33	35	50	5
	11	13	47	34	58	54	35	38	40	5
	10	11	41	31	55	53	35	38	35	5
	9	9	38	30	53	52	36	40	30	4
	7	8	34	27	50	50	37	40	25	4
	6	7	30	21	47	48	38	42	20	4
	5	5	20	8	32	44	46	48	10	3
	1	3	7	7	12	36	64	60	4	2
	1	1	3	4	3	32	70	90	1	1

AGE 12

	RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 8-MINUTE RUN		PERCENTILE	STANINE
Number of Pupils Tested	471	405	390	388	434	417	428	212		
	M	F	M	F	M	F	M	F		
	90	71	160	200	85	84	4.7	6.2	99	9
	84	65	150	130	82	77	4.6	6.0	96	8
	73	50	130	117	75	74	4.4	5.2	90	8
	62	35	129	117	72	70	4.3	4.2	80	7
	56	30	126	117	71	68	4.2	4.0	75	6
	51	26	126	117	69	66	4.1	3.7	70	6
	46	23	126	117	68	65	4.0	3.6	65	6
	41	19	114	116	66	63	3.7	3.5	60	5
	32	15	90	78	64	60	3.6	3.3	50	5
	25	11	70	60	61	57	3.4	3.2	40	5
	22	10	60	54	60	56	3.3	3.2	35	5
	19	8	56	50	58	54	3.2	3.1	30	4
	16	7	50	44	55	52	3.1	3.1	25	4
	13	6	42	37	52	51	2.7	3.0	20	4
	8	3	30	25	43	48	2.7	2.6	10	3
	3	1	16	15	20	38	2.5	2.3	4	2
	0	1	3	5	1	24	2.5	1.7	1	1

AGE 13

	RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 8-MINUTE RUN		PERCENTILE	STANINE
Number of Pupils Tested	307	448	264	512	293	481	240	428		
	M	F	M	F	M	F	M	F		
	114	87	167	150	89	85	5.3	6.2	99	9
	94	61	153	125	84	79	5.1	5.1	96	8
	89	44	140	117	81	75	5.0	4.2	90	8
	77	33	126	117	78	71	4.7	3.7	80	7
	72	28	125	110	77	70	4.6	3.6	75	6
	67	24	125	109	75	69	4.5	3.5	70	6
	63	21	125	105	74	67	4.4	3.4	65	6
	60	20	125	105	73	66	4.4	3.3	60	5
	52	17	112	89	70	63	4.3	3.2	50	5
	45	13	88	70	69	61	4.2	3.1	40	5
	41	12	76	65	66	60	4.1	3.0	35	5
	36	11	70	60	65	58	4.0	2.7	30	4
	32	9	65	50	63	57	4.0	2.7	25	4
	26	8	60	49	61	55	3.7	2.6	20	4
	14	5	42	30	50	52	3.5	2.4	10	3
	8	2	25	20	34	44	3.1	2.2	4	2
	4	1	5	9	26	32	2.6	2.2	1	1

AGE 14

	RAW SCORES ARM HANG		SIT-UPS		BROAD JUMP		12-MINUTE RUN		PERCENTILE	STANINE
Number of Pupils Tested	698	852	736	432	806	620	384	356		
	M	F	M	F	M	F	M	F		
	103	70	169	137	99	91	7.8	7.0	99	9
	88	64	135	117	90	80	7.5	6.5	96	8
	74	48	126	115	85	76	7.2	5.4	90	8
	65	40	125	100	80	73	6.6	5.0	80	7
	62	34	125	100	78	72	6.5	4.7	75	6
	60	30	125	100	77	70	6.4	4.6	70	6
	57	25	119	80	75	69	6.2	4.5	65	6
	52	23	105	70	74	68	6.0	4.3	60	5
	45	20	85	60	71	65	5.5	4.2	50	5
	30	16	65	50	68	63	5.1	4.1	40	5
	28	14	60	45	66	61	5.0	4.0	35	5
	25	13	54	40	64	60	4.7	3.7	30	4
	22	11	50	33	62	59	4.5	3.7	25	4
	20	9	42	27	60	57	4.3	3.5	20	4
	14	6	28	17	44	52	3.6	3.2	10	3
	9	4	19	9	21	44	3.0	2.7	4	2
	5	1	5	5	7	28	2.6	2.4	1	1

AGE 15

	RAW SCORES ARM HANG		SIT-UPS		BROAD JUMP		12-MINUTE RUN		PERCENTILE	STANINE
Number of Pupils Tested	589	596	645	553	503	541	203	270		
	M	F	M	F	M	F	M	F		
	115	93	170	117	100	91	8.3	7.2	99	9
	90	67	136	115	92	80	8.1	6.7	96	8
	81	50	127	90	89	74	8.0	6.6	90	8
	73	35	125	69	85	71	7.2	6.5	80	7
	70	32	125	60	84	70	7.1	6.4	75	6
	67	28	111	57	82	69	7.0	6.3	70	6
	63	25	100	50	80	68	6.6	6.2	65	6
	61	22	96	50	78	66	6.4	6.2	60	5
	54	18	80	46	76	64	6.1	6.1	50	5
	48	15	70	40	72	62	6.0	5.8	40	5
	44	13	65	36	70	60	5.4	5.8	35	5
	40	11	61	35	67	60	5.3	5.7	30	4
	35	10	58	30	65	58	5.1	5.6	25	4
	30	9	50	30	63	56	5.0	5.5	20	4
	19	6	30	20	49	50	4.2	5.5	10	3
	11	3	18	10	23	41	3.6	5.2	4	2
	3	1	3	5	6	26	3.0	4.8	1	1

AGE 16

	RAW SCORES ARM HANG		SIT-UPS		BROAD JUMP		12-MINUTE RUN		PERCENTILE	STANINE
Number of Pupils Tested	339	360	396	428	367	385	265	270		
	M	F	M	F	M	F	M	F		
	130	72	175	167	104	88	8.5	7.5	99	9
	119	56	150	125	100	85	8.3	7.0	96	8
	94	39	140	107	94	78	8.2	6.9	90	8
	74	31	125	81	89	72	7.4	6.8	80	7
	71	29	120	70	88	71	7.3	6.7	75	6
	66	26	110	60	86	69	7.2	6.6	70	6
	63	24	100	50	85	68	6.8	6.5	65	6
	60	21	100	50	84	67	6.6	6.5	60	5
	53	16	88	50	82	64	6.3	6.4	50	5
	48	13	75	45	79	62	6.2	6.1	40	5
	45	11	70	41	78	62	5.6	6.1	35	5
	42	10	63	40	77	60	5.5	6.0	30	4
	39	9	60	36	75	59	5.3	5.9	25	4
	35	9	55	33	73	58	5.2	5.8	20	4
	27	6	45	28	68	53	4.4	5.8	10	3
	18	5	40	20	58	47	3.8	5.5	4	2
	8	1	31	7	42	30	3.2	5.1	1	1

SUMMARY REMARKS

The norms in this chapter have been provided as a service to ACTIVE adopters. Hopefully, the norms published will serve as a catalyst and stimulate other districts and agencies to establish local norms for their student populations.

Limitations

The norms have definite limitations. They do not provide the final answer in establishing individualized physical activity programs, but rather are viewed as a step in the right direction. Some limitations and cautions in using the norms are as follows:

1. The norms are only valid for comparing students who were part of the population used to establish the standards. Thus, the comparison of norms formulated for different districts or states is invalid.
2. The local, state, and national norms are not necessarily based on random samples of their respective student populations. It is highly possible that some of the performance scores may reflect "skewed" distributions (i.e., distributions that do not assume a normal curve pattern).
3. Skewness may have been increased somewhat because an inappropriate test instrument was applied to some of the students. For example, a student achieving inordinately high scores on the Motor Ability Instrument: Level II should have been administered the Level III battery. (The same reasoning applies to individual test items.)
4. Some of the norms are based on limited student populations. It is conceivable that the population involved was "biased," that is, most of the students were in need of program involvement, or were gifted. It is generally recommended that the norm-referenced charts be based on "n's" (number of subjects tested) of 500 and upwards if, one is to be assured of a normal distribution of scores.

Recommendations

School districts must establish standards in order to evaluate student performance and program effectiveness. In a limited way, the norms provided will aid adopter districts toward these goals.

Recommendations worthy of consideration include the following:

1. Every school, district or agency should establish its own **local** norms—norms based on the total population. Guidelines for establishing norms for any test or battery of tests are provided in Chapter VII.
2. Student test scores should be viewed as a "means to an end" rather than as an "end in, and of themselves." In other words, test results should furnish a partial basis for providing an individualized-personalized program rather than as a basis for a grade.

CHAPTER VI

LOCAL AND STATE NORMS BASED ON MENTAL AGE

The use of norm-referenced charts based on chronological ages is totally inappropriate for assessing the motor performance and physical fitness of students who exhibit comprehension dysfunctions. Chapter IV substantiates that premise in its review of previous research, correlational studies conducted by the ACTIVE Office and analyses of norms based on chronological and mental ages. Based on the findings, the following conclusions are proffered:

1. The establishment of norms for mentally retarded and learning disabled students should be based on **mental** rather than **chronological** ages.
2. Mental and chronological ages are equally appropriate for establishing norms for emotionally disturbed students.

This chapter provides teachers and administrators who desire to adopt the **mental age approach** with norms for the mentally retarded, learning disabled or emotionally disturbed students. The norms are contained in three sections:

SECTION I

Norms

Mentally Retarded

Motor ability, level II—pp. 111-117
Motor ability, level III—pp. 117-120
Physical Fitness, level II—pp. 121-126

SECTION II

Learning Disabled

Motor ability, level II—pp. 127-131
Motor ability, level III—pp. 132-134
Physical fitness, level II—pp. 135-138

SECTION III

Norms

Emotionally Disturbed

Motor ability, level II—pp. 139-142
Motor ability, level III—pp. 142-145
Physical fitness, level II—pp. 145-148

The motor and physical fitness norms for each handicapping condition have been clustered in each of the sections to minimize the time needed to locate a specific handicapping condition and/or instrument.

SECTION I
MOTOR ABILITY NORMS: MENTALLY RETARDED

Mentally Retarded

New Jersey.

Instrument: Motor Ability Level II
Mental Ages: 2-11
Data Gathered By: ACTIVE Office

MENTAL AGE 2

	Gross Body Coordination		Balance Postural Orientation		Eye and Hand Coordination		Eye and Hand Accuracy		Eye and Foot Accuracy			
Number of Pupils Tested	92	78	121	84	116	88	129	90	145	91		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	19	19	18	16	16	18	17	18	99	9
	9	10	18	18	16	16	15	16	15	16	96	8
	8	9	16	17	14	13	14	13	14	12	90	8
	8	8	15	14	12	12	12	12	12	11	80	7
	8	8	14	14	12	11	11	11	12	10	75	6
	7	8	14	13	12	11	11	10	11	9	70	6
	6	7	13	12	11	11	10	10	10	9	65	6
	6	7	12	12	10	10	9	9	9	9	60	5
	6	6	11	11	9	8	8	8	8	8	50	5
	6	5	9	9	8	7	7	7	6	7	40	5
	6	5	8	8	8	7	6	7	6	7	35	5
	5	4	8	8	8	7	6	7	6	7	30	4
	4	4	7	7	7	6	5	6	4	6	25	4
	4	4	6	7	6	6	4	6	4	6	20	4
	3	2	5	5	4	4	2	4	3	4	10	3
	1	2	3	1	3	3	1	3	1	3	4	2
	0	0	1	0	1	0	0	0	1	0	1	1

COMPOSITE STANINES	MAI	COMPOSITE STANINES	MAI	COMPOSITE STANINES	MAI	COMPOSITE STANINES	MAI
5	10	15	30	25	50	35	70
6	12	16	32	26	52	36	72
7	14	17	34	27	54	37	74
8	16	18	36	28	56	38	76
9	18	19	38	29	58	39	78
10	20	20	40	30	60	40	80
11	22	21	42	31	62	41	82
12	24	22	44	32	64	42	84
13	26	23	46	33	66	43	86
14	28	24	48	34	68	44	88
						45	90

Note: Where raw scores are repeated, record the **PERCENTILE** and/or **STANINE** score for the **UPPERMOST RAW SCORE.** (For example, a male "GBC" raw score of 4 reflects a percentile of 25 and a stanine of 4)

MENTAL AGE 3

	Gross Body Coordination		Balance Postural Orientation		Eye and Hand Coordination		Eye and Hand Accuracy		Eye and Foot Accuracy			
Number of Pupils Tested	127	94	139	107	135	107	135	108	133	108		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	24	21	18	17	15	17	15	17	99	9
	10	10	19	18	18	16	14	14	13	13	96	8
	9	9	17	16	16	13	13	13	12	12	90	8
	8	8	14	14	14	12	12	12	10	11	80	7
	8	8	13	14	13	11	12	11	10	11	75	6
	7	8	12	13	13	11	11	11	9	11	70	6
	7	7	12	13	12	10	10	10	9	10	65	6
	7	7	10	12	12	10	10	9	8	10	60	5
	6	6	10	11	11	9	9	8	7	9	50	5
	5	6	9	9	10	8	8	7	6	8	40	5
	5	5	8	9	9	7	7	7	6	7	35	5
	4	5	8	8	9	7	7	6	4	6	30	4
	4	4	7	8	8	7	6	6	4	6	25	4
	4	4	6	7	8	6	6	5	3	5	20	4
	2	2	4	5	6	5	3	3	4	4	10	3
	1	2	3	3	4	3	1	1	1	2	4	2
	0	0	1	0	1	1	0	0	1	0	1	1

MENTAL AGE 4

Number of Pupils Tested	165	100	196	104	183	106	182	108	178	105		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	24	23	18	17	16	16	15	16	99	9
	10	10	24	20	18	15	15	14	14	15	96	8
	10	10	21	17	16	13	14	13	13	13	90	8
	9	9	18	15	14	12	13	11	11	12	80	7
	9	8	16	14	13	12	12	11	10	11	75	6
	9	8	16	14	13	12	12	10	10	11	70	6
	8	8	14	13	12	11	11	10	9	11	65	6
	8	8	13	12	12	11	10	9	9	10	60	5
	8	7	12	11	11	10	9	8	8	9	50	5
	7	6	11	10	9	9	8	7	6	9	40	5
	6	6	10	10	9	9	8	7	6	8	35	5
	6	6	10	9	8	8	7	7	5	8	30	4
	5	6	9	8	8	7	6	6	5	7	25	4
	4	5	8	8	6	7	6	5	4	6	20	4
	3	4	7	6	4	6	4	3	2	5	10	3
	1	3	6	3	2	5	1	1	1	3	4	2
	0	0	1	2	1	3	0	1	1	0	1	1

MENTAL AGE 5

	Gross Body Coordination		Balance Postural Orientation		Eye and Hand Coordination		Eye and Hand Accuracy		Eye and Foot Accuracy			
Number of Pupils Tested	176	92	170	96	174	98	180	100	177	96		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	24	24	18	17	17	16	16	15	99	9
	10	10	24	23	18	15	16	15	15	14	96	8
	10	10	22	19	16	15	15	14	14	13	90	8
	10	10	18	17	15	13	14	13	13	12	80	7
	10	9	18	16	14	13	13	12	12	11	75	6
	9	9	17	16	14	13	13	11	11	11	70	6
	9	8	16	14	13	12	12	10	11	11	65	6
	8	8	15	14	13	12	12	10	10	10	60	5
	8	7	13	13	12	11	11	9	9	9	50	5
	7	7	11	12	10	10	10	8	8	8	40	5
	7	7	11	11	10	9	9	8	7	8	35	5
	6	6	10	10	9	8	9	7	7	7	30	4
	6	6	9	9	8	8	8	7	6	6	25	4
	6	6	8	8	7	7	7	6	5	6	20	4
	4	4	6	7	6	7	6	3	3	4	10	3
	2	3	5	4	3	5	4	1	2	3	4	2
	0	1	2	2	2	3	4	1	1	1	1	1

MENTAL AGE 6

Number of Pupils Tested	130	96	140	96	132	96	133	101	126	95		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	24	24	18	16	17	16	17	16	99	9
	10	10	22	21	17	15	16	15	15	15	96	8
	10	10	19	20	16	13	15	13	14	13	90	8
	9	9	18	18	15	13	14	12	13	12	80	7
	9	9	17	16	15	12	13	11	12	12	75	6
	9	8	16	16	14	12	13	11	11	11	70	6
	8	8	14	15	13	11	12	11	11	11	65	6
	8	8	14	14	12	11	12	10	10	10	60	5
	8	7	12	13	11	10	11	9	9	9	50	5
	7	6	11	12	10	9	10	8	8	8	40	5
	6	6	11	12	10	9	9	7	7	8	35	5
	6	6	9	11	9	8	9	6	7	7	30	4
	6	5	9	10	9	8	8	6	6	6	25	4
	5	5	8	8	8	7	8	5	6	5	20	4
	4	4	5	7	6	6	5	3	4	3	10	3
	3	2	3	5	4	4	3	2	2	2	4	2
	1	1	1	1	2	1	2	1	1	1	1	1

MENTAL AGE 7

	Gross Body Coordination		Balance Postural Orientation		Eye and Hand Coordination		Eye and Hand Accuracy		Eye and Foot Accuracy			
Number of Pupils Tested	133	90	130	89	134	90	125	93	128	90		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	24	23	18	17	17	16	18	16	99	9
	10	10	24	22	18	16	16	14	17	15	96	8
	10	10	22	19	16	16	16	13	16	14	90	8
	10	9	19	18	15	14	14	12	14	13	80	7
	9	9	18	17	15	13	14	11	13	13	75	6
	9	9	18	16	14	13	14	11	13	12	70	6
	9	8	18	16	14	13	13	11	12	12	65	6
	8	8	16	14	13	12	13	10	12	12	60	6
	8	8	14	14	12	11	12	9	10	11	50	5
	7	7	13	12	11	11	11	8	9	9	40	5
	7	7	13	12	10	10	10	7	8	9	35	5
	6	6	12	11	9	10	9	7	7	8	30	4
	6	6	11	10	9	9	8	7	7	7	25	4
	6	6	10	10	8	9	7	6	6	6	20	4
	4	4	8	8	7	7	5	4	4	5	10	3
	2	2	6	6	5	5	3	1	3	3	4	2
	0	1	1	1	3	4	2	0	1	1	1	1

MENTAL AGE 8

Number of Pupils Tested	98	75	96	80	92	75	98	82	100	73		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	23	24	17	17	18	17	18	17	99	9
	10	10	22	22	17	16	17	16	17	16	96	8
	10	10	21	20	16	15	16	14	16	15	90	8
	9	9	19	18	15	14	16	12	15	14	80	7
	9	9	18	18	14	13	15	12	14	13	75	6
	8	9	18	17	14	13	14	11	13	13	70	6
	8	8	16	16	13	12	14	11	12	12	65	6
	8	8	16	16	13	12	13	10	12	12	60	5
	7	8	14	14	12	11	12	9	11	11	50	5
	6	7	13	14	10	10	11	8	9	10	40	5
	6	7	12	13	9	9	11	8	9	10	35	5
	6	6	12	13	9	9	9	7	8	9	30	4
	5	6	11	12	8	9	9	7	8	8	25	4
	4	6	10	12	8	9	8	6	7	7	20	4
	3	4	9	10	5	7	6	5	4	6	10	3
	0	2	6	8	4	6	4	3	2	5	4	2
	0	2	4	6	2	3	1	2	1	3	1	1

MENTAL AGE 9

	Gross Body Coordination		Balance Postural Orientation		Eye and Hand Coordination		Eye and Hand Accuracy		Eye and Foot Accuracy			
Number of Pupils Tested	97	68	76	68	73	69	73	74	71	67		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	24	24	18	17	17	17	18	17	99	9
	10	10	24	23	18	16	17	16	17	17	96	8
	10	10	22	22	17	15	16	15	17	15	90	8
	10	9	21	20	16	14	14	14	15	14	80	7
	9	9	20	18	15	14	14	14	15	14	75	6
	9	8	18	18	14	13	14	13	14	13	70	6
	9	8	18	16	14	13	13	13	14	13	65	6
	8	8	16	16	13	12	13	12	13	12	60	5
	8	8	15	14	12	12	12	11	12	12	50	5
	7	7	13	13	11	11	11	11	11	11	40	5
	7	6	12	13	10	10	11	10	11	11	35	5
	6	6	12	12	9	10	10	9	10	10	30	4
	6	5	11	12	9	9	9	9	10	9	25	4
	5	4	10	12	8	9	9	7	9	9	20	4
	4	3	8	10	7	7	7	4	7	7	10	3
	3	2	6	8	5	4	5	3	5	4	4	2
	2	1	4	3	4	3	3	3	4	3	1	1

MENTAL AGE 10

Number of Pupils Tested	59	47	47	47	45	48	51	54	53	48		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	24	24	18	17	18	17	18	18	99	9
	10	10	24	23	17	17	18	17	17	17	96	8
	10	10	23	22	17	16	17	16	16	16	90	8
	10	10	20	20	16	15	16	15	15	15	80	7
	10	10	19	20	16	15	16	15	15	13	75	6
	9	10	18	19	15	14	16	14	15	13	70	6
	9	9	18	18	15	13	15	14	14	12	65	6
	8	9	17	18	15	13	15	13	14	12	60	5
	8	8	16	16	14	13	14	12	12	12	50	5
	8	8	14	16	13	13	13	11	11	11	40	5
	7	7	14	15	12	12	12	11	11	10	35	5
	6	6	13	14	12	12	12	11	10	9	30	4
	6	6	13	14	12	12	11	9	9	9	25	4
	6	4	12	14	10	12	10	9	9	9	20	4
	3	3	11	12	8	10	8	6	7	7	10	3
	1	2	9	10	6	8	6	6	6	6	4	2
	1	0	8	10	3	7	5	4	5	6	1	1

MENTAL AGE 11

Number of Pupils Tested	Gross Body Coordination 71	46	Balance Postural Orientation 61	50	Eye and Hand Coordination 63	50	Eye and Hand Accuracy 64	47	Eye and Foot Accuracy 63	49		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	23	24	18	17	18	18	18	18	99	9
	10	10	23	24	18	17	18	17	18	17	96	8
	10	10	22	23	17	16	17	16	17	16	90	8
	10	9	20	22	16	15	17	15	15	15	80	7
	9	9	20	20	16	15	16	15	15	15	75	6
	9	8	18	20	15	14	16	14	14	14	70	6
	9	8	18	19	15	14	15	14	13	14	65	6
	9	8	18	18	14	13	15	13	13	13	60	5
	8	8	16	18	14	13	14	12	12	13	50	5
	7	7	14	16	13	12	13	11	10	12	40	5
	6	7	13	16	12	11	12	9	10	12	35	5
	6	6	13	15	12	11	12	9	9	10	30	4
	6	6	12	14	12	11	10	8	8	9	25	4
	5	6	12	14	10	9	10	7	7	8	20	4
	3	4	10	10	9	7	8	6	6	7	10	3
	0	3	8	6	8	6	6	6	5	6	4	2
	0	2	6	4	6	4	5	4	4	4	1	1

Mentally Retarded

New Jersey.

Instrument: Motor Ability Level III
Mental Ages: 5-11
Data Gathered By: ACTIVE Office

MENTAL AGE 5

Number of Pupils Tested	(Cable Jump) Gross Body Coordination 108		(Beam Walk) Balance Postural Orientation 109		(Ball Bounce) Eye–Hand Coordination 107		(Throw) Eye–Hand Accuracy 106	35	(Kick) Eye–Foot Accuracy 100	35		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10		129		57		13	10	12	14	99	9
	10		121		50		12	10	10	11	96	8
	6		115		48		11	10	10	10	90	8
	5		96		44		9	10	8	10	80	7
	4		95		43		9	10	7	7	75	6
	4		88		42		8	7	7	7	70	6
	3		79		41		7	5	7	5	65	6
	3		77		40		7	4	6	3	60	5
	2		70		33		6	3	5	2	50	5
	1		59		30		5	2	3	2	40	5
	1		52		27		4	2	3	1	35	5
	1		46		25		4	2	3	1	30	4
	0		32		18		4	1	2	1	25	4
	0		6		5		2	1	1	1	10	3
	0		2		2		1	0	1	0	4	2
	0		1		1		0	0	0	0	1	1

MENTAL AGE 6

Number of Pupils Tested	(Cable Jump) Gross Body Coordination		(Beam Walk) Balance Postural Orientation		(Ball Bounce) Eye–Hand Coordination		(Throw) Eye–Hand Accuracy		(Kick) Eye–Foot Accuracy			
	83	93	84	95	77	89	85	69	82	64		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	132	127	60	64	15	15	14	12	99	9
	10	10	130	122	57	60	13	13	12	11	96	8
	10	10	122	117	53	53	12	12	11	11	90	8
	7	7	115	100	50	48	11	10	10	9	80	7
	6	6	112	98	49	45	11	10	10	7	75	6
	6	6	105	93	46	43	10	9	10	7	70	6
	5	5	100	84	46	42	10	8	9	7	65	6
	5	4	90	75	45	40	10	8	9	6	60	5
	4	3	80	66	41	35	9	7	7	6	50	5
	2	2	70	52	39	28	5	6	6	4	40	5
	2	2	62	44	33	23	4	5	6	3	35	5
	2	1	49	32	30	17	4	4	4	3	30	4
	1	1	39	10	23	10	3	3	3	3	25	4
	1	1	10	10	10	10	3	2	3	2	20	4
	0	0	10	1	10	1	2	1	1	1	10	3
	0	0	1	1	1	1	1	1	1	1	4	2
	0	0	1	0	1	1	0	0	0	0	1	1

MENTAL AGE 7

Number of Pupils Tested	87	56	82	74	83	64	86	74	83	70		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	128	126	65	65	15	14	15	13	99	9
	10	10	126	124	60	64	15	13	14	13	96	8
	10	10	118	117	57	60	13	12	12	12	90	8
	8	8	111	106	53	55	12	11	11	11	80	7
	8	7	108	100	52	34	11	11	10	10	75	6
	7	7	102	98	49	52	10	10	10	9	70	6
	6	6	99	97	46	50	10	10	9	9	65	6
	6	6	93	92	45	48	9	9	9	8	60	5
	5	5	83	77	40	45	9	8	8	6	50	5
	4	4	70	66	35	40	7	7	6	6	40	5
	3	3	64	63	33	38	6	6	6	5	35	5
	2	2	57	60	30	36	5	5	5	5	30	4
	2	2	48	54	30	35	4	5	4	5	25	4
	1	1	35	49	27	32	3	4	3	3	20	4
	0	0	10	10	10	27	1	2	1	3	10	3
	0	0	1	10	1	10	1	1	1	1	4	2
	0	0	1	6	1	3	0	1	1	0	1	1

MENTAL AGE 8

	(Cable Jump) Gross Body Coordination		(Beam Walk) Balance Postural Orientation		(Ball Bounce) Eye–Hand Coordination		(Throw) Eye–Hand Accuracy		(Kick) Eye–Foot Accuracy			
Number of Pupils Tested	73	75	75	79	77	69	74	83	76	84		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	132	131	65	65	15	15	17	15	99	9
	10	10	128	130	64	65	14	14	15	15	96	8
	9	8	114	123	60	62	12	13	13	13	90	8
	7	8	106	115	55	55	12	11	13	12	80	7
	6	7	102	113	52	53	12	11	12	12	75	6
	6	6	98	106	51	50	11	10	11	11	70	6
	6	6	87	104	50	50	11	10	11	11	65	6
	5	5	84	99	48	47	10	10	10	10	60	5
	4	4	75	87	45	44	9	9	8	10	50	5
	3	3	69	77	43	41	7	9	7	8	40	5
	2	2	60	74	40	39	6	7	7	7	35	5
	2	2	58	66	37	35	5	6	6	7	30	4
	1	1	57	59	35	33	4	5	5	6	25	4
	1	1	50	54	32	26	[illegible]	5	5	5	20	4
	0	1	36	38	27	10	2	3	3	3	10	3
	0	0	10	10	10	10	1	1	1	3	4	2
	0	0	1	7	1	7	1	1	1	1	1	1

MENTAL AGE 9

Number of Pupils Tested	79	69	87	63	78	54	84	62	80	64		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	131	133	65	65	15	15	17	16	99	9
	10	10	129	131	63	65	15	15	17	15	96	8
	9	9	121	127	60	60	13	14	14	14	90	8
	8	8	116	120	52	55	12	13	13	13	80	7
	8	7	112	113	50	53	11	13	12	11	75	6
	7	6	108	109	49	52	11	12	12	11	70	6
	6	6	105	102	48	50	10	11	11	11	65	6
	6	6	104	100	48	45	10	11	11	9	60	5
	5	5	95	91	45	40	9	9	10	9	50	5
	4	4	82	74	41	39	7	9	9	7	40	5
	4	3	79	71	39	35	6	8	7	7	35	5
	3	3	75	67	36	33	6	7	7	6	30	4
	2	2	71	58	35	33	5	6	6	5	25	4
	2	2	68	53	32	30	4	5	5	5	20	4
	1	0	45	37	15	26	3	3	3	2	10	3
	0	0	4	3	4	1	1	1	1	1	4	2
	0	0	1	0	1	0	1	0	1	0	1	1

MENTAL AGE 10

Number of Pupils Tested	(Cable Jump) Gross Body Coordination 78	62	(Beam Walk) Balance Postural Orientation 73	66	(Ball Bounce) Eye–Hand Coordination 76	67	(Throw) Eye–Hand Accuracy 90	67	(Kick) Eye–Foot Accuracy 79	66		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	9	132	133	64	62	16	17	17	16	99	9
	9	9	131	131	62	61	15	15	16	15	96	8
	8	8	127	123	60	55	13	14	15	13	90	8
	7	8	114	117	55	52	12	13	13	13	80	7
	6	8	110	116	52	49	11	13	13	12	75	6
	6	7	109	108	50	48	11	12	11	11	70	6
	5	6	106	104	48	47	10	11	11	11	65	6
	5	6	104	98	48	46	10	11	10	10	60	5
	4	5	100	85	45	43	9	10	9	9	50	5
	3	4	88	77	41	40	7	9	7	7	40	5
	2	3	86	72	40	39	7	8	7	7	35	5
	2	2	72	66	40	36	6	7	6	7	30	4
	2	2	63	61	38	35	6	7	5	6	25	4
	1	2	58	52	36	32	5	5	4	5	20	4
	0	1	54	40	32	30	3	3	3	3	10	3
	0	0	48	31	30	27	2	2	2	2	4	2
	0	0	40	2	27	2	1	0	1	1	1	1

MENTAL AGE 11

Number of Pupils Tested	61	63	64	68	62	73	62	71	67	68		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	131	130	63	65	17	17	17	18	99	9
	10	10	127	124	63	62	16	16	15	17	96	8
	8	9	124	117	57	60	15	15	14	15	90	8
	8	8	113	108	53	53	13	13	13	14	80	7
	8	8	103	104	50	53	13	13	12	13	75	6
	7	8	102	102	48	51	12	12	11	13	70	6
	6	7	99	98	47	50	11	12	11	12	65	6
	6	6	93	96	45	48	11	11	11	11	60	5
	5	5	84	88	44	46	9	11	9	10	50	5
	4	4	72	78	42	43	9	9	8	9	40	5
	4	4	69	77	40	42	8	9	7	8	35	5
	3	4	67	72	37	40	7	8	7	7	30	4
	2	3	64	66	35	39	6	7	6	7	25	4
	2	2	61	63	33	36	5	6	5	5	20	4
	0	1	48	55	29	31	3	3	3	3	10	3
	0	0	42	46	25	27	1	1	1	1	4	2
120	0	0	36	12	22	10	1	0	1	0	1	1

PHYSICAL FITNESS NORMS: MENTALLY RETARDED

Mentally Retarded

New Jersey.

Instrument: Physical Fitness Level II

Mental Ages: 2-12

Data Gathered By: ACTIVE Office

MENTAL AGE 2

	RAW SCORES ARM HANG		SIT-UPS		RAW SCORES BROAD JUMP		200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	80	37	67	42	99		63			
	M	F	M	F	M	F	M	F		
	12	10	25	15	48		29		99	9
	10	5	23	14	48		29		96	8
	8	2	21	11	41		30		90	8
	6	1	19	7	36		33		80	7
	5	1	15	5	32		37		75	6
	4	1	14	4	30		38		70	6
	4	1	12	1	30		40		65	6
	3	1	10	1	28		41		60	5
	2	1	10	1	24		48		50	5
	1	0	7	1	19		52		40	5
	1	0	6	0	17		54		35	5
	1	0	5	0	13		57		30	4
	1	0	5	0	11		65		25	4
	1	0	3	0	8		67		20	4
	0	0	2	0	2		78		10	3
	0	0	1	0	1		86		4	2
	0	0	0	0	0		90		1	1

NOTE: Raw scores were omitted where data were insufficient.

MENTAL AGE 3

	RAW SCORES ARM HANG		SIT-UPS		RAW SCORES BROAD JUMP		200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	96	66	107	64	101	51	75			
	M	F	M	F	M	F	M	F		
	13	8	50	18	48	7	28		99	9
	12	8	42	18	47	6	29		96	8
	8	5	35	15	42	4	33		90	8
	5	2	29	11	36	2	36		80	7
	5	2	25	10	34	2	41		75	6
	4	1	24	8	33	1	42		70	6
	4	1	22	6	28	1	43		65	6
	3	1	19	4	27	1	44		60	5
	2	1	13	3	23	1	49		50	5
	1	0	9	1	18	0	54		40	5
	1	0	7	1	16	0	57		35	5
	1	0	6	1	12	0	59		30	4
	1	0	5	0	10	0	62		25	4
	1	0	4	0	8	0	67		20	4
	0	0	2	0	2	0	76		10	3
	0	0	1	0	1	0	78		4	2
	0	0	0	0	1	0	80		1	1

NOTE: Raw scores were omitted where data were insufficient.

MENTAL AGE 4

	RAW SCORES ARM HANG		SIT-UPS		BROAD JUMP		RAW SCORES 200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	165	77	166	57	171	70	81	52		
	M	F	M	F	M	F	M	F		
	25	7	50	20	65	48	26	28	99	9
	20	7	47	20	63	46	26	28	96	8
	13	5	41	19	58	42	30	35	90	8
	10	3	35	15	50	38	35	45	80	7
	8	3	30	14	48	35	37	47	75	6
	7	2	29	12	45	32	39	49	70	6
	6	2	27	8	42	30	41	50	65	6
	5	2	25	6	40	27	42	51	60	5
	4	1	20	4	36	24	44	60	50	5
	3	1	16	2	29	17	47	72	40	5
	2	1	15	1	27	12	49	76	35	5
	1	0	13	1	24	4	51	80	30	4
	1	0	10	1	21	4	51	80	25	4
	0	0	7	1	18	2	53	82	20	4
	0	0	3	0	4	1	57	90	10	3
	0	0	0	0	0	0	60	111	4	2
	0	0	0	0	0	0	65	158	1	1

MENTAL AGE 5

	RAW SCORES ARM HANG		SIT-UPS		BROAD JUMP		RAW SCORES 200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	139	62	147	51	173	49	134	48		
	M	F	M	F	M	F	M	F		
	22	14	60	28	59	50	28	29	99	9
	19	14	56	27	54	49	30	32	96	8
	16	9	50	27	51	48	32	35	90	8
	12	5	44	21	48	41	34	38	80	7
	10	4	41	19	45	36	36	41	75	6
	10	3	40	18	44	34	39	42	70	6
	8	3	36	17	41	33	40	45	65	6
	7	3	33	17	40	31	42	46	60	5
	5	2	28	13	36	28	45	47	50	5
	3	2	20	5	28	14	48	48	40	5
	3	2	17	5	26	5	50	50	35	5
	2	1	15	4	24	4	52	54	30	4
	2	1	12	4	21	2	55	54	25	4
	1	1	9	2	16	2	60	55	20	4
	1	0	4	1	4	1	71	60	10	3
	0	0	1	0	1	0	106	74	4	2
	0	0	0	0	0	0	120	128	1	1

MENTAL AGE 7

	RAW SCORES				RAW SCORES					
	ARM HANG		SIT-UPS		BROAD JUMP		200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	95	72	111	65	115	62	107	51		
	M	F	M	F	M	F	M	F		
	24	10	60	35	63	61	27	29	99	9
	19	8	55	35	60	61	28	30	96	8
	17	6	48	32	56	54	29	33	90	8
	13	5	35	28	50	46	34	38	80	7
	12	4	30	25	48	45	36	40	75	6
	12	3	28	24	46	42	38	40	70	6
	10	2	26	21	45	42	38	42	65	6
	8	2	24	19	43	39	40	44	60	5
	6	2	20	15	40	36	41	49	50	5
	5	1	17	9	37	31	44	57	40	5
	4	1	15	7	35	29	45	63	35	5
	3	1	14	5	34	26	47	66	30	4
	3	0	13	4	32	21	49	68	25	4
	2	0	9	3	30	5	52	75	20	4
	1	0	4	0	26	0	58	90	10	3
	0	0	2	0	22	0	62	120	4	2
	0	0	0	0	22	0	67	120	1	1

MENTAL AGE 6

	RAW SCORES				RAW SCORES					
	ARM HANG		SIT-UPS		BROAD JUMP		200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	112	52	130	41	129	52	115	38		
	M	F	M	F	M	F	M	F		
	23	7	60	25	58	44	27	28	99	9
	22	5	55	23	57	43	27	30	96	8
	19	5	50	22	53	39	28	32	90	8
	13	4	40	16	52	38	26	32	80	7
	12	3	37	15	49	36	30	35	75	6
	11	3	32	14	48	30	32	39	70	6
	9	3	30	12	45	29	35	40	65	6
	8	3	29	10	42	27	39	45	60	5
	5	2	22	6	37	16	43	48	50	5
	4	1	17	3	36	12	47	51	40	5
	3	1	16	2	34	6	50	53	35	5
	3	1	12	2	32	4	51	59	30	4
	2	1	10	1	30	3	54	59	25	4
	2	1	9	1	28	2	58	70	20	4
	1	0	4	1	25	1	66	90	10	3
	0	0	2	0	22	1	76	103	4	2
	0	0	1	0	18	0	142	109	1	1

MENTAL AGE 8

	RAW SCORES				RAW SCORES					
	ARM HANG		SIT-UPS		BROAD JUMP		200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	59	50	55	66	90	45	73	38		
	M	F	M	F	M	F	M	F		
	25	9	59	45	64	62	26	27	99	9
	25	9	57	44	61	59	26	29	96	8
	20	8	55	38	57	58	27	29	90	8
	15	6	45	30	52	55	27	31	80	7
	12	6	38	30	51	51	30	31	75	6
	10	5	35	26	48	50	32	35	70	6
	8	5	33	25	48	46	36	37	65	6
	8	4	28	24	45	42	36	40	60	5
	7	4	25	21	42	41	40	43	50	5
	5	3	17	17	36	36	44	46	40	5
	5	2	13	15	35	36	45	48	35	5
	4	2	12	11	34	35	49	52	30	4
	4	2	10	8	32	22	52	52	25	4
	2	1	6	7	30	20	55	60	20	4
	0	0	3	4	26	7	62	70	10	3
	0	0	0	0	23	4	69	70	4	2
	0	0	0	0	21	0	73	70	1	1

MENTAL AGE 9

	RAW SCORES				RAW SCORES					
	ARM HANG		SIT-UPS		BROAD JUMP		200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	41	61	67	53	74		67			
	M	F	M	F	M	F	M	F		
	25	9	60	34	67		4		99	9
	25	9	58	34	67		26		96	8
	24	9	55	30	60		32		90	8
	20	6	49	25	55		35		80	7
	14	5	43	25	54		36		75	6
	14	5	41	24	53		38		70	6
	12	4	37	23	50		38		65	6
	11	4	35	23	48		40		60	5
	10	3	32	21	45		43		50	5
	7	3	25	17	38		48		40	5
	6	2	24	17	36		49		35	5
	5	1	24	14	34		52		30	4
	2	0	20	10	32		56		25	4
	2	0	14	4	30		59		20	4
	0	0	5	0	25		64		10	3
	0	0	2	0	22		70		4	2
	0	0	0	0	22		72		1	1

Note: Raw scores were omitted where data were insufficient.

MENTAL AGE 10

	RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	42		54		65		70			
	M	F	M	F	M	F	M	F		
	25		60		60		26		99	9
	25		60		59		26		96	8
	19		55		58		31		90	8
	13		46		54		34		80	7
	12		45		53		35		75	6
	10		43		51		37		70	6
	8		40		49		38		65	6
	8		40		49		40		60	5
	7		36		46		45		50	5
	6		30		45		49		40	5
	6		25		44		53		35	5
	5		25		42		55		30	4
	4		20		40		58		25	4
	2		17		37		64		20	4
	1		5		34		72		10	3
	0		0		28		75		4	2
	0		0		24		90		1	1

Note: Raw scores were omitted where data were insufficient.

MENTAL AGE 11

	RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	34		44		43		55			
	M	F	M	F	M	F	M	F		
	35		60		58		27		99	9
	34		55		58		29		96	8
	32		53		54		34		90	8
	28		43		52		38		80	7
	27		37		50		40		75	6
	25		34		49		40		70	6
	24		33		46		44		65	6
	18		32		46		45		60	5
	16		28		42		50		50	5
	12		25		39		53		40	5
	9		22		38		54		35	5
	9		22		38		56		30	4
	8		20		35		58		25	4
	5		18		35		60		20	4
	3		14		32		63		10	3
	0		7		28		70		4	2
	0		1		28		72		1	1

Note: Raw scores were omitted where data were insufficient.

MENTAL AGE 12

	RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested			54		47		52			
	M	F	M	F	M	F	M	F		
			73		63		26		99	9
			70		62		31		96	8
			68		61		35		90	8
			60		58		38		80	7
			56		56		39		75	6
			53		55		41		70	6
			48		53		42		65	6
			45		52		45		60	5
			40		44		52		50	5
			32		40		57		40	5
			28		37		59		35	5
			25		36		62		30	4
			23		36		63		25	4
			20		34		66		20	4
			12		29		72		10	3
			3		27		74		4	2
			3		26		77		1	1

Note: Raw scores were omitted where data were insufficient.

Monmouth College Training Program, West Long Branch, N.J.

SECTION II

MOTOR ABILITY NORMS: LEARNING DISABLED

Learning Disabled
New Jersey
Instrument: Motor Ability Level II
Mental Ages: 4-11
Data Gathered By: ACTIVE Office

MENTAL AGE 4

	Gross Body Coordination		Balance Postural Orientation		Eye and Hand Coordination		Eye and Hand Accuracy		Eye and Foot Accuracy			
Number of Pupils Tested	76	39	75	40	70	39	80	33	70	39		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	21	18	16	16	16	14	16	13	99	9
	10	10	20	16	16	15	14	12	15	12	96	8
	10	10	19	16	14	15	13	12	14	12	90	8
	10	9	18	14	14	13	12	11	14	11	80	7
	9	8	17	14	13	12	11	10	13	11	75	6
	9	8	16	14	12	12	11	9	12	10	70	6
	9	8	15	14	12	12	10	9	12	9	65	6
	8	8	15	13	12	12	9	9	12	9	60	5
	8	7	14	12	10	11	8	7	11	8	50	5
	7	6	13	10	9	11	7	6	10	7	40	5
	6	6	11	10	8	10	7	6	9	6	35	5
	6	6	10	8	7	9	6	6	8	6	30	4
	5	5	10	8	6	9	6	4	7	6	25	4
	4	5	8	8	6	9	6	3	7	5	20	4
	2	3	6	5	3	8	4	1	4	3	10	3
	0	2	4	5	1	6	3	0	3	3	4	2
	0	2	2	1	0	4	1	0	0	0	1	1

COMPOSITE STANINES	MAI	COMPOSITE STANINES	MAI	COMPOSITE STANINES	MAI	COMPOSITE STANINES	MAI
5	10	15	30	25	50	35	70
6	12	16	32	26	52	36	72
7	14	17	34	27	54	37	74
8	16	18	36	28	56	38	76
9	18	19	38	29	58	39	78
10	20	20	40	30	60	40	80
11	22	21	42	31	62	41	82
12	24	22	44	32	64	42	84
13	26	23	46	33	66	43	86
14	28	24	48	34	68	44	88
						45	90

Note: Where raw scores are repeated, record the **PERCENTILE** and/or **STANINE** score for the **UPPERMOST RAW SCORE.** (For example, a male "GBC" raw score of 9 reflects a percentile of 75 and a stanine of 6.)

MENTAL AGE 5

	Gross Body Coordination		Balance Postural Orientation		Eye and Hand Coordination		Eye and Hand Accuracy		Eye and Foot Accuracy			
Number of Pupils Tested	89	64	87	62	78	56	74	56	54	57		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	24	24	18	18	14	13	12	14	99	9
	10	10	24	24	16	18	13	13	12	13	96	8
	10	10	23	21	16	17	13	12	12	13	90	8
	10	10	22	18	15	16	11	11	10	12	80	7
	10	10	20	18	15	15	11	10	10	11	75	6
	10	10	18	18	14	15	10	9	8	11	70	6
	9	10	18	17	14	14	10	9	8	10	65	6
	9	9	16	16	14	14	9	9	7	9	60	5
	8	8	15	15	12	12	8	7	6	8	50	5
	8	8	13	14	12	12	7	7	6	7	40	5
	8	8	12	14	11	12	7	6	6	6	35	5
	7	8	12	14	10	11	6	6	4	6	30	4
	6	7	10	12	10	11	5	6	4	5	25	4
	6	6	9	12	9	10	4	5	3	4	20	4
	4	4	8	10	6	9	4	3	3	3	10	3
	2	2	6	8	3	6	2	3	0	1	4	2
	0	2	5	5	2	5	0	1	0	1	1	1

MENTAL AGE 6

Number of Pupils Tested	86	67	90	57	98	62	70	60	52	63		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	24	24	18	18	16	13	12	15	99	9
	10	10	24	23	18	18	15	13	12	15	96	8
	10	10	21	22	16	16	13	13	10	13	90	8
	10	10	19	20	15	15	11	11	10	13	80	7
	10	9	18	20	15	15	11	11	9	12	75	6
	10	9	17	19	14	15	11	11	9	12	70	6
	9	9	16	18	13	14	10	10	9	11	65	6
	9	8	15	18	12	14	10	9	8	11	60	5
	8	8	13	16	11	13	9	9	8	10	50	5
	8	7	11	16	10	12	9	7	8	8	40	5
	8	6	10	15	9	12	9	7	6	7	35	5
	8	6	10	14	8	12	8	6	6	7	30	4
	7	5	10	14	8	11	8	6	6	6	25	4
	6	5	9	13	7	11	7	5	6	6	20	4
	4	4	8	12	5	9	5	3	4	3	10	3
	2	2	6	10	3	3	3	1	0	3	4	2
	0	2	4	8	1	3	1	0	0	3	1	1

MENTAL AGE 7

	Gross Body Coordination		Balance Postural Orientation		Eye and Hand Coordination		Eye and Hand Accuracy		Eye and Foot Accuracy			
Number of Pupils Tested	86	53	82	45	88	46	70	46	63	45		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	24	23	18	18	15	14	14	16	99	9
	10	10	24	21	18	17	14	13	14	15	96	8
	10	10	24	20	18	16	13	13	11	14	90	8
	10	10	23	19	16	15	11	12	9	13	80	7
	10	9	22	18	16	15	11	11	9	13	75	6
	10	9	21	18	16	13	10	11	9	12	70	6
	10	8	20	18	15	13	9	11	9	11	65	6
	10	8	20	18	14	13	9	10	8	11	60	5
	9	8	17	17	13	12	8	8	7	10	50	5
	8	8	15	14	12	11	6	7	6	8	40	5
	8	7	14	14	12	11	6	6	6	8	35	5
	8	7	12	14	11	10	6	6	6	7	30	4
	7	6	11	12	10	9	6	6	6	7	25	4
	6	6	10	12	9	8	5	5	5	6	20	4
	5	4	6	10	7	7	3	3	3	4	10	3
	2	4	0	8	3	6	3	3	0	3	4	2
	2	3	0	7	0	6	3	3	0	3	1	1

MENTAL AGE 8

Number of Pupils Tested	69	49	68	54	63	42	68	45	40	48		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	24	24	18	18	17	15	14	15	99	9
	10	10	24	24	18	17	17	14	14	14	96	8
	10	10	22	22	17	17	16	13	12	13	90	8
	10	10	20	20	16	15	15	12	11	12	80	7
	10	10	19	18	15	15	13	12	10	12	75	6
	10	10	19	16	15	15	12	11	10	11	70	6
	9	9	18	16	14	15	12	11	10	11	65	6
	9	9	18	16	13	14	11	11	9	18	60	5
	8	8	16	14	12	13	11	9	8	9	50	5
	8	8	13	14	10	12	10	8	7	7	40	5
	8	8	12	14	10	12	9	7	7	7	35	5
	7	8	11	13	10	11	9	7	6	6	30	4
	6	7	10	12	9	11	8	6	6	6	25	4
	6	6	9	12	8	10	7	6	6	5	20	4
	3	5	7	10	6	8	5	3	5	3	10	3
	1	4	4	3	4	8	3	0	3	3	4	2
	0	4	1	0	3	6	0	0	0	2	11	1

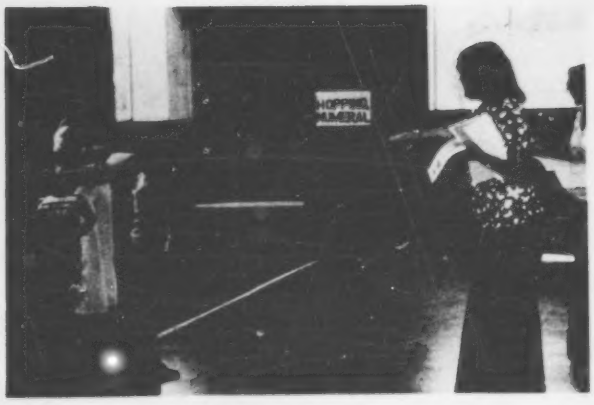
MENTAL AGE 9

	Gross Body Coordination		Balance Postural Orientation		Eye and Hand Coordination		Eye and Hand Accuracy		Eye and Foot Accuracy			
Number of Pupils Tested	52	40	64	49	51	39	61	79	34	76		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	24	24	18	18	17	17	14	17	99	9
	10	10	23	23	17	18	17	15	13	16	96	8
	10	10	22	22	17	17	16	14	12	15	90	8
	10	10	21	21	16	15	14	13	12	15	80	7
	10	10	18	20	15	15	13	13	12	13	75	6
	9	10	18	20	15	14	13	12	10	13	70	6
	9	9	16	19	14	13	12	12	10	13	65	6
	8	9	15	18	14	13	12	11	9	12	60	5
	8	8	14	16	12	13	11	10	9	11	50	5
	6	8	12	16	11	11	11	9	9	9	40	5
	6	8	10	15	11	11	10	9	9	9	35	5
	6	8	10	14	10	11	9	9	8	9	30	4
	5	6	8	13	10	9	9	7	8	8	25	4
	4	6	8	12	8	9	9	7	7	7	20	4
	3	4	6	10	7	8	8	5	5	6	10	3
	2	3	5	8	3	6	6	4	2	3	4	2
	0	1	2	5	3	4	5	1	2	1	1	1

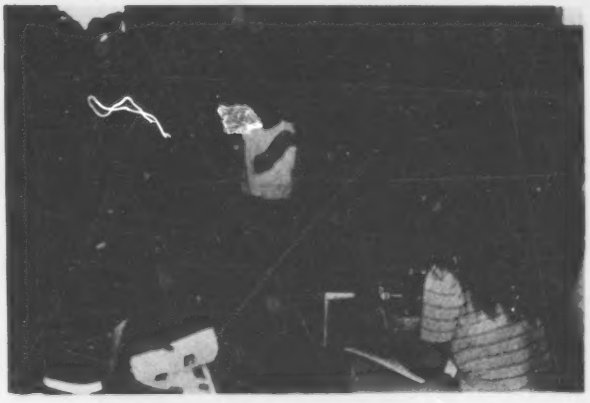
MENTAL AGE 10

Number of Pupils Tested	53		48		42		53		73			
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10		24		18		16		15		99	9
	10		24		18		15		14		96	8
	10		24		18		14		14		90	8
	10		23		17		14		12		80	7
	9		22		17		13		12		75	6
	9		22		16		12		12		70	6
	8		21		16		12		11		65	6
	8		20		15		12		11		60	5
	8		18		14		11		10		50	5
	6		16		13		11		9		40	5
	6		14		13		10		9		35	5
	5		12		12		9		8		30	4
	4		12		11		9		8		25	4
	4		10		10		8		7		20	4
	2		8		6		7		5		10	3
	2		6		5		4		4		4	2
	1		6		4		3		2		1	1

	Gross Body Coordination	Balance Postural Orientation	Eye and Hand Coordination	Eye and Hand Accuracy	Eye and Foot Accuracy		
Number of Pupils Tested	31	33	30	32			
	RAW SCORES	RAW SCORES	RAW SCORES	RAW SCORES	RAW SCORES		
	M F	M F	M F	M F	M F	PERCENTILE	STANINE
	10	24	17	18		99	9
	10	24	17	17		96	8
	10	24	16	16		90	8
	10	21	16	15		80	7
	10	21	16	15		75	6
	9	20	16	14		70	6
	9	20	16	14		65	6
	9	18	15	13		60	5
	8	17	15	13		50	5
	8	15	13	12		40	5
	7	15	13	11		35	5
	6	12	12	11		30	4
	6	10	11	9		25	4
	6	9	11	8		20	4
	5	7	8	7		10	3
	4	3	4	6		4	2
	4	3	4	6		1	1



Eye-hand Accuracy



Gross Body Balance

Motor Ability Testing

Learning Disabled

New Jersey

Instrument: Motor Ability Level III

Mental Ages: 6-11

Data Gathered By: ACTIVE Office

MENTAL AGE 6

	(Cable Jump) Gross Body Coordination		(Beam Walk) Balance Postural Orientation		(Ball Bounce) Eye–Hand Coordination		(Throw) Eye–Hand Accuracy		(Kick) Eye–Foot Accuracy			
Number of Pupils Tested	149	92	137	92	124	87	114	132	190	139		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	142	139	72	58	15	13	15	15	99	9
	10	10	136	137	70	55	14	12	13	14	96	8
	10	9	123	131	64	50	12	11	12	12	90	8
	8	8	115	119	58	48	11	11	11	11	80	7
	7	8	111	116	56	45	11	10	10	11	75	6
	6	7	107	107	53	43	10	9	10	10	70	6
	6	6	100	105	50	42	10	9	9	9	65	6
	5	6	98	102	48	40	9	8	9	9	60	5
	4	5	86	97	45	36	8	7	8	7	50	5
	3	4	75	88	40	35	7	7	7	7	40	5
	2	4	66	79	36	33	7	6	6	6	35	5
	2	3	60	74	34	32	6	6	6	6	30	4
	1	2	52	67	31	31	5	5	6	5	25	4
	1	2	41	60	29	30	4	4	4	5	20	4
	0	0	10	42	19	38	2	3	2	3	10	3
	0	0	3	39	10	25	1	2	1	2	4	2
	0	0	1	8	10	12	0	0	0	0	1	1

MENTAL AGE 7

Number of Pupils Tested	142	94	138	85	118	87	137	142	187	137		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	142	131	74	57	15	15	16	13	99	9
	9	9	132	130	70	53	13	13	14	12	96	8
	8	8	121	117	68	51	12	12	13	11	90	8
	7	6	112	106	64	50	11	11	12	11	80	7
	6	6	108	100	62	48	10	11	11	10	75	6
	6	6	104	95	58	46	10	10	11	9	70	6
	5	5	98	90	56	44	9	10	11	9	65	6
	5	4	95	86	54	42	9	9	10	9	60	5
	4	4	86	81	50	38	8	8	9	8	50	5
	3	3	80	72	46	36	7	7	7	7	40	5
	3	2	72	67	45	35	6	6	7	6	35	5
	2	2	68	64	44	33	6	6	6	6	30	4
	2	1	62	58	42	32	5	5	5	6	25	4
	1	1	57	52	40	30	3	5	5	5	20	4
	1	0	45	44	32	28	2	3	3	3	10	3
	0	0	2	36	28	25	0	2	1	2	4	2
	0	0	0	10	14	10	0	0	1	1	1	1

MENTAL AGE 8

	(Cable Jump) Gross Body Coordination		(Beam Walk) Balance Postural Orientation		(Ball Bounce) Eye–Hand Coordination		(Throw) Eye–Hand Accuracy		(Kick) Eye–Foot Accuracy			
Number of Pupils Tested	157	100	164	101	149	102	161	147	186	139		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	142	132	75	63	16	16	17	15	99	9
	10	10	135	128	71	56	15	15	15	14	96	8
	9	8	129	122	69	55	14	13	14	13	90	8
	8	8	120	112	62	50	12	12	13	12	80	7
	7	7	116	107	60	50	12	12	13	11	75	6
	6	6	113	105	56	47	11	11	12	11	70	6
	6	6	110	102	54	44	11	11	11	11	65	6
	5	6	106	98	52	43	10	10	11	10	60	5
	4	5	96	86	48	40	10	9	9	9	50	5
	3	4	80	77	45	38	8	8	7	9	40	5
	3	4	75	73	43	36	8	7	7	8	35	5
	2	3	68	62	41	35	7	7	7	7	30	4
	2	2	60	58	40	33	6	7	6	7	25	4
	1	1	55	55	38	31	5	6	5	7	20	4
	0	0	38	47	32	29	3	4	3	5	10	3
	0	0	3	42	10	25	2	2	1	3	4	2
	0	0	2	37	10	20	0	1	0	1	1	1

MENTAL AGE 9

Number of Pupils Tested	162	103	166	105	163	105	162	152	196	147		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	144	134	75	60	16	16	18	18	99	9
	10	10	140	128	71	59	15	15	17	17	96	8
	9	9	129	117	66	55	14	15	15	15	90	8
	8	8	119	112	60	50	13	13	14	15	80	7
	7	7	116	108	58	49	12	13	14	14	75	6
	6	6	112	107	55	48	12	12	13	13	70	6
	6	6	109	105	52	47	11	12	12	13	65	6
	6	6	107	99	50	46	11	12	12	12	60	5
	5	4	96	94	47	43	9	11	11	12	50	5
	4	4	85	86	44	41	8	9	9	11	40	5
	3	3	78	82	42	40	8	9	9	10	35	5
	2	2	69	77	40	38	7	8	9	9	30	4
	2	2	62	72	38	36	6	7	8	9	25	4
	1	2	54	69	37	35	6	7	7	7	20	4
	0	0	45	62	30	31	4	5	4	6	10	3
	0	0	18	46	25	28	2	3	2	3	4	2
	0	0	5	10	10	25	1	1	1	3	1	1

MENTAL AGE 10

	(Cable Jump) Gross Body Coordination		(Beam Walk) Balance Postural Orientation		(Ball Bounce) Eye–Hand Coordination		(Throw) Eye–Hand Accuracy		(Kick) Eye–Foot Accuracy			
Number of Pupils Tested	150	92	123	89	148	100	147	143	173	143		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	143	131	75	62	17	17	18	18	99	9
	10	10	139	123	70	60	16	17	16	17	96	8
	9	9	133	122	65	55	15	15	15	16	90	8
	8	8	123	108	60	52	14	14	13	15	80	7
	7	8	120	104	58	50	13	14	13	14	75	6
	6	8	117	98	58	49	13	13	13	13	70	6
	6	7	111	96	55	47	12	13	12	13	65	6
	6	6	108	90	54	45	12	13	12	13	60	5
	5	6	96	81	50	43	11	11	11	12	50	5
	4	5	78	75	48	40	9	10	10	11	40	5
	3	4	75	72	46	38	9	9	9	11	35	5
	3	4	70	69	43	35	8	9	9	10	30	4
	2	3	66	63	40	34	7	8	8	9	25	4
	2	2	58	62	39	32	6	7	7	9	20	4
	1	0	48	49	34	30	4	5	5	6	10	3
	0	0	28	38	28	27	2	3	3	3	4	2
	0	0	5	3	10	26	1	1	2	1	1	1

MENTAL AGE 11

Number of Pupils Tested	132	95	163	92	157	94	165	145	205	154		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	144	133	75	62	17	18	18	18	99	9
	10	10	143	131	72	60	16	17	17	17	96	8
	9	9	127	123	66	57	16	16	15	16	90	8
	8	8	126	117	62	53	14	15	14	15	80	7
	8	8	123	113	60	52	14	14	14	14	75	6
	8	7	119	108	58	50	13	13	13	13	70	6
	7	7	115	105	55	49	13	13	13	13	65	6
	6	6	111	98	54	47	12	12	12	13	60	5
	6	5	103	89	51	46	11	12	11	12	50	5
	5	4	96	81	48	45	10	11	10	11	40	5
	4	3	92	77	46	41	9	10	9	11	35	5
	4	3	86	74	45	40	9	9	9	9	30	4
	3	2	82	64	44	40	8	9	8	9	25	4
	2	2	76	60	41	36	7	8	7	8	20	4
	1	0	58	52	35	32	5	5	5	6	10	3
	0	0	45	42	30	28	3	3	2	3	4	2
	0	0	10	30	10	25	1	1	1	3	1	1

Learning Disabled

New Jersey.

Instrument: Physical Fitness Level II

Mental Ages: 5-11

Data Gathered By: ACTIVE Office

MENTAL AGE 5

	RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	72		84		76		42			
	M	F	M	F	M	F	M	F		
	72		45		54		42		99	9
	17		44		53		43		96	8
	13		35		51		44		90	8
	9		27		47		46		80	7
	8		25		45		47		75	6
	8		23		43		48		70	6
	8		22		40		48		65	6
	7		20		39		50		60	5
	5		16		37		53		50	5
	4		14		34		58		40	5
	3		12		32		59		35	5
	3		10		28		60		30	4
	2		6		26		65		25	4
	1		5		21		73		20	4
	1		4		12		99		10	3
	0		1		6		125		4	2
	0		1		4		130		1	1

Note: Where scores not recorded, data insufficient.

MENTAL AGE 6

	RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	71	58	99	52	101	30	82	30		
	M	F	M	F	M	F	M	F		
	17	21	50	42	57	50	37	33	99	9
	14	21	49	40	56	48	37	34	96	8
	13	14	40	27	54	45	40	40	90	8
	11	10	31	23	50	42	43	44	80	7
	9	9	28	22	48	41	44	45	75	6
	7	8	26	20	47	40	47	48	70	6
	6	7	25	20	45	39	47	49	65	6
	6	6	22	18	42	38	49	50	60	5
	4	4	20	15	39	37	50	52	50	5
	4	3	15	13	37	36	52	56	40	5
	4	2	14	10	36	33	54	58	35	5
	3	2	10	10	34	31	57	58	30	4
	3	2	10	6	32	31	60	60	25	4
	2	1	8	4	28	29	68	65	20	4
	1	0	5	2	16	26	79	69	10	3
	1	0	4	1	5	25	86	69	4	2
	1	0	3	0	2	25	95	69	1	1

MENTAL AGE 7

	RAW SCORES ARM HANG		SIT-UPS		BROAD JUMP		200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	94	44	88	44	99	30	73	73		
	M	F	M	F	M	F	M	F		
	29	20	50	50	60	50	35	33	99	9
	29	19	42	46	58	48	37	36	96	8
	21	17	38	42	56	47	38	38	90	8
	16	10	31	37	52	46	41	40	80	7
	15	8	28	26	51	46	42	41	75	6
	13	7	27	25	49	45	42	43	70	6
	11	7	24	24	48	45	44	43	65	6
	9	7	23	20	47	43	44	45	60	5
	7	5	20	19	45	42	45	47	50	5
	6	4	18	15	42	40	47	50	40	5
	5	4	16	15	40	40	48	51	35	5
	4	3	13	11	39	39	49	55	30	4
	4	2	11	10	36	38	51	71	25	4
	3	1	10	10	34	36	53	80	20	4
	1	0	4	6	16	26	77	93	10	3
	1	0	3	4	4	26	85	100	4	2
	0	0	1	1	3	26	85	100	1	1

MENTAL AGE 8

	RAW SCORES ARM HANG		SIT-UPS		BROAD JUMP		200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	115	36	124	46	140	39	80			
	M	F	M	F	M	F	M	F		
	30	21	50	50	64	58	35		99	9
	30	19	49	45	62	58	35		96	8
	19	15	43	40	59	54	38		90	8
	13	10	37	36	55	50	40		80	7
	12	9	35	35	53	48	40		75	6
	11	8	33	29	52	47	42		70	6
	9	7	30	28	50	47	43		65	6
	9	7	28	26	48	45	44		60	5
	8	6	22	23	46	43	45		50	5
	6	5	20	20	43	41	47		40	5
	5	5	17	18	40	39	49		35	5
	5	5	14	15	38	39	51		30	4
	4	4	12	13	35	39	52		25	4
	4	4	10	10	34	37	56		20	4
	2	2	5	5	26	29	70		10	3
	1	1	4	3	4	27	83		4	2
	0	1	0	2	3	26	85		1	1

Note: Where scores not recorded, data insufficient.

MENTAL AGE 9

	RAW SCORES ARM HANG		SIT-UPS		RAW SCORES BROAD JUMP		200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	147	57	144	59	141	52	119	35		
	M	F	M	F	M	F	M	F		
	30	19	55	47	65	60	28	35	99	9
	28	15	52	41	63	60	30	35	96	8
	21	11	50	39	62	56	33	35	90	8
	17	10	40	34	59	51	35	38	80	7
	15	6	38	30	56	50	36	39	75	6
	13	5	35	30	56	48	38	40	70	6
	11	5	32	28	54	48	38	40	65	6
	10	5	30	27	52	47	40	41	60	5
	9	4	25	22	50	44	41	43	50	5
	7	1	22	19	48	42	45	45	40	5
	5	1	20	16	47	41	46	45	35	5
	5	1	18	14	45	29	46	45	30	4
	5	1	14	13	43	35	50	57	25	4
	4	1	11	11	41	33	52	58	20	4
	2	1	5	5	36	23	61	70	10	3
	1	0	4	3	32	22	66	70	4	2
	0	0	1	3	25	20	73	70	1	1

MENTAL AGE 10

	RAW SCORES ARM HANG		SIT-UPS		RAW SCORES BROAD JUMP		200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	88		94		94	47	79	31		
	M	F	M	F	M	F	M	F		
	28		70		69	63	33	37	99	9
	24		69		67	61	34	38	96	8
	20		60		66	58	35	39	90	8
	15		45		60	57	37	41	80	7
	14		40		60	55	38	41	75	6
	12		40		58	54	40	41	70	6
	11		34		55	53	40	44	65	6
	10		30		53	50	42	44	60	5
	8		27		51	46	45	51	50	5
	5		22		48	43	46	58	40	5
	4		20		48	42	48	65	35	5
	4		17		46	42	50	69	30	4
	4		15		46	38	52	70	25	4
	3		13		43	37	54	76	20	4
	1		5		41	34	61	83	10	3
	1		4		31	26	75	84	4	2
	0		2		27	26	75	84	1	1

Note: Where scores not recorded, data insufficient.

MENTAL AGE 11

	RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	81	43		39	86		70			
	M	F	M	F	M	F	M	F		
	27	14		50	69		31		99	9
	27	14		50	69		33		96	8
	23	13		44	63		35		90	8
	21	10		35	60		36		80	7
	20	10		30	59		37		75	6
	19	9		30	58		37		70	6
	17	9		27	57		38		65	6
	15	7		27	56		38		60	5
	13	7		25	54		41		50	5
	11	5		20	52		43		40	5
	10	5		20	49		44		35	5
	9	4		20	48		45		30	4
	8	3		16	48		46		25	4
	7	1		14	45		49		20	4
	4	1		5	41		52		10	3
	3	0		3	34		57		4	2
	1	0		3	28		65		1	1

Note: Where scores not recorded, data insufficient.

Static Arm Hang

Sit-ups

Physical Fitness Test Items

MOTOR ABILITY NORMS: EMOTIONALLY DISTURBED

Emotionally Disturbed
New Jersey
Instrument: Motor Ability Level II
Mental Ages: 4-9
Data Gathered By: ACTIVE Office

MENTAL AGE 4

	Gross Body Coordination		Balance Postural Orientation		Eye and Hand Coordination		Eye and Hand Accuracy		Eye and Foot Accuracy			
Number of Pupils Tested	43		52		63		62		63			
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
		10		24		17		14		16	99	9
		10		23		17		14		16	96	8
		9		20		15		13		14	90	8
		8		18		13		12		13	80	7
		8		16		13		12		12	75	6
		7		16		12		11		11	70	6
		6		14		11		11		10	65	6
		6		14		11		10		9	60	5
		6		12		9		9		9	50	5
		4		11		9		9		7	40	5
		4		10		8		8		7	35	5
		4		9		7		7		6	30	4
		4		8		6		7		5	25	4
		3		8		6		6		4	20	4
		1		6		3		3		3	10	3
		1		4		1		1		1	4	2
		0		4		0		1		1	1	1

COMPOSITE STANINES	MAI	COMPOSITE STANINES	MAI	COMPOSITE STANINES	MAI	COMPOSITE STANINES	MAI
5	10	15	30	25	50	35	70
6	12	16	32	26	52	36	72
7	14	17	34	27	54	37	74
8	16	18	36	28	56	38	76
9	18	19	38	29	58	39	78
10	20	20	40	30	60	40	80
11	22	21	42	31	62	41	82
12	24	22	44	32	64	42	84
13	26	23	46	33	66	43	86
14	28	24	48	34	68	44	88
						45	90

Note: Where raw scores are repeated, record the **PERCENTILE** and/or **STANINE** score for the **UPPERMOST RAW SCORE.** (For example, a male "GBC" raw score of 1 reflects a percentile of 10 and a stanine of 3)

MENTAL AGE 5

	Gross Body Coordination		Balance Postural Orientation		Eye and Hand Coordination		Eye and Hand Accuracy		Eye and Foot Accuracy			
Number of Pupils Tested	45	46	66	46	73	56	75	51	69	54		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	24	22	18	17	14	14	14	15	99	9
	10	9	24	20	18	17	13	14	14	15	96	8
	10	8	17	18	18	17	12	13	12	15	90	8
	9	8	15	16	15	14	11	13	11	13	80	7
	8	8	14	16	12	12	10	12	11	13	75	6
	8	7	13	16	11	12	10	12	9	12	70	6
	8	6	12	16	11	12	9	12	9	11	65	6
	7	6	11	14	11	11	9	11	8	11	60	5
	6	6	9	14	8	11	9	11	7	10	50	5
	5	4	8	12	7	10	8	9	7	9	40	5
	4	4	8	12	7	9	7	9	7	9	35	5
	4	4	6	10	6	9	7	9	6	8	30	4
	3	4	6	10	5	7	7	8	5	7	25	4
	3	2	4	8	4	7	6	7	5	7	20	4
	2	2	4	6	3	5	4	6	3	4	10	3
	1	1	2	4	1	3	3	5	2	2	4	2
	0	0	2	4	0	3	2	3	1	2	1	1

MENTAL AGE 6

Number of Pupils Tested	58	43	70	68	68	69	70	67	73	76		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	24	22	16	16	15	15	14	15	99	9
	10	10	23	20	15	15	14	15	13	14	96	8
	10	9	21	18	15	14	13	13	13	13	90	8
	9	8	20	16	14	13	12	13	11	12	80	7
	9	8	19	16	13	13	12	12	11	12	75	6
	8	8	18	16	12	12	11	12	10	12	70	6
	8	8	16	14	11	12	11	11	9	11	65	6
	8	7	15	14	11	11	11	11	9	11	60	5
	6	6	12	13	10	11	9	9	8	10	50	5
	6	6	12	12	9	9	9	9	7	9	40	5
	5	5	10	12	9	9	7	7	7	9	35	5
	5	4	10	10	8	8	7	7	6	9	30	4
	4	4	10	10	8	7	7	6	6	9	25	4
	4	4	8	9	7	7	6	5	5	7	20	4
	2	2	6	7	5	6	4	3	3	5	10	3
	1	2	4	3	3	4	3	3	3	3	4	2
	1	1	1	1	1	3	3	1	0	1	1	1

MENTAL AGE 7

	Gross Body Coordination		Balance Postural Orientation		Eye and Hand Coordination		Eye and Hand Accuracy		Eye and Foot Accuracy			
Number of Pupils Tested	43	42	75	71	61	65	70	68	71	67		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	24	22	17	15	15	15	15	16	99	9
	10	10	21	19	16	13	14	14	14	15	96	8
	10	10	19	18	15	13	14	14	13	13	90	8
	8	8	16	16	14	12	13	13	12	13	80	7
	8	8	16	16	14	11	13	12	11	12	75	6
	8	8	15	15	14	11	12	12	11	12	70	6
	8	7	14	14	13	11	12	11	11	12	65	6
	8	6	14	14	13	9	11	11	10	11	60	5
	7	6	13	13	12	9	10	10	10	10	50	5
	6	5	11	12	11	8	9	9	9	9	40	5
	6	4	10	12	11	7	9	9	9	8	35	5
	5	4	10	11	10	7	8	8	8	7	30	4
	5	4	9	10	9	7	7	7	8	7	25	4
	4	4	8	9	9	7	7	7	7	7	20	4
	4	2	7	8	7	5	6	6	6	5	10	3
	2	2	6	6	5	3	4	5	3	3	4	2
	2	1	4	6	3	3	3	5	2	1	1	1

MENTAL AGE 8

Number of Pupils Tested	45	40	69	66	67	60	67	66	77	60		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	24	22	18	16	15	16	16	16	99	9
	10	10	21	21	17	16	15	15	15	15	96	8
	10	10	20	20	17	15	13	14	14	14	90	8
	10	8	18	18	15	14	13	13	13	12	80	7
	9	8	17	18	15	13	12	13	12	12	75	6
	8	8	16	17	14	12	12	13	12	12	70	6
	8	8	16	16	13	12	12	12	11	11	65	6
	8	7	15	16	13	12	11	12	11	11	60	5
	8	6	14	14	12	11	10	11	11	10	50	5
	7	6	12	12	12	10	9	10	9	9	40	5
	7	5	11	12	11	9	9	9	9	9	35	5
	6	4	10	12	11	9	8	9	7	9	30	4
	6	4	10	11	10	8	8	8	7	8	25	4
	6	4	9	10	9	7	8	7	7	8	20	4
	4	3	7	8	7	7	6	7	5	6	10	3
	4	2	6	6	6	3	5	5	4	4	4	2
	2	2	4	6	3	3	3	3	3	3	1	1

MENTAL AGE 9

Number of Pupils Tested	Gross Body Coordination		Balance Postural Orientation		Eye and Hand Coordination		Eye and Hand Accuracy		Eye and Foot Accuracy	
	47	52	70	64	59	73	54	75	68	71
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES	
	M	F	M	F	M	F	M	F	M	F
	10	10	24	24	18	17	15	17	17	17
	10	10	24	23	18	16	15	16	15	16
	10	10	22	22	16	16	15	15	15	15
	10	9	20	20	15	14	13	14	14	13
	10	9	18	18	14	13	13	13	13	12
	9	8	18	18	13	13	12	13	13	12
	9	8	16	18	13	13	12	13	12	12
	8	8	16	16	12	12	12	13	12	11
	8	8	14	16	11	11	11	12	11	11
	8	6	12	14	11	11	10	11	9	9
	7	6	12	14	10	11	9	11	9	9
	6	6	11	13	9	10	9	11	8	8
	6	4	10	12	9	9	9	10	7	7
	4	4	10	12	8	9	8	9	7	7
	2	4	8	10	6	7	5	7	6	6
	1	2	6	9	5	7	4	6	3	5
	1	2	1	8	4	5	4	3	2	3

PERCENTILE	STANINE
99	9
96	8
90	8
80	7
75	6
70	6
65	6
60	5
50	5
40	5
35	5
30	4
25	4
20	4
10	3
4	2
1	1

Emotionally Disturbed

New Jersey.

Instrument: Motor Ability Level III

Mental Ages: 6-11

Data Gathered By: ACTIVE Office

MENTAL AGE 6

Number of Pupils Tested	(Cable Jump) Gross Body Coordination		(Beam Walk) Balance Postural Orientation		(Ball Bounce) Eye–Hand Coordination		(Throw) Eye–Hand Accuracy		(Kick) Eye–Foot Accuracy	
	97	79	91	84	93	67	98	79	100	82
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES	
	M	F	M	F	M	F	M	F	M	F
	9	9	140	133	62	59	14	12	14	11
	8	8	137	127	59	58	13	11	13	10
	7	8	131	123	55	55	12	10	11	9
	6	6	122	117	50	54	11	9	9	9
	6	6	119	115	50	52	11	7	9	8
	6	6	118	113	48	52	10	7	9	7
	6	6	114	110	47	49	9	7	8	7
	5	6	112	107	46	47	9	7	7	7
	4	5	106	100	43	45	7	6	7	6
	4	4	99	95	40	40	7	5	6	6
	4	4	96	93	40	38	6	4	6	5
	3	4	88	88	39	38	6	4	5	5
	2	3	86	85	37	35	5	3	4	4
	2	3	80	79	35	33	4	3	3	3
	1	2	76	67	31	28	3	2	2	3
	0	1	70	58	25	25	1	1	1	1
	0	1	59	53	17	18	0	0	0	0

PERCENTILES	STANINE
99	9
96	8
90	8
80	7
75	6
70	6
65	6
60	5
50	5
40	5
35	5
30	4
25	4
20	4
10	3
4	2
1	1

MENTAL AGE 7

	(Cable Jump) Gross Body Coordination		(Beam Walk) Balance Postural Orientation		(Ball Bounce) Eye–Hand Coordination		(Throw) Eye–Hand Accuracy		(Kick) Eye–Foot Accuracy			
Number of Pupils Tested	99	83	83	76	80	82	100	83	89	82		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	9	9	133	132	60	60	14	12	13	13	99	9
	9	8	132	131	60	60	12	12	12	12	96	8
	8	8	123	123	55	55	11	11	11	10	90	8
	7	7	117	119	50	52	10	9	9	9	80	7
	6	6	115	115	49	50	9	9	9	9	75	6
	6	6	112	113	48	48	9	9	9	8	70	6
	6	6	111	111	45	47	9	8	9	7	65	6
	6	6	106	107	45	45	7	7	8	7	60	5
	5	5	98	100	42	44	7	7	7	7	50	5
	4	4	92	95	40	40	6	6	7	6	40	5
	4	4	90	93	40	39	6	6	6	6	35	5
	4	4	87	89	38	37	5	5	6	6	30	4
	3	4	85	86	36	35	5	4	5	5	25	4
	2	3	82	80	35	35	4	4	4	4	20	4
	1	2	74	72	30	30	3	3	3	3	10	3
	1	1	73	63	19	27	2	1	2	2	4	2
	1	0	63	57	10	22	1	0	1	1	1	1

MENTAL AGE 8

Number of Pupils Tested	102	77	94	78	95	78	104	86	108	78		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	133	133	59	62	13	13	15	13	99	9
	9	9	131	132	56	60	13	13	12	13	96	8
	8	8	125	123	54	59	12	11	11	11	90	8
	8	8	120	117	50	54	11	11	11	11	80	7
	7	8	118	117	50	52	10	10	11	11	75	6
	7	7	117	113	48	51	9	9	10	11	70	6
	6	7	113	112	48	50	9	9	9	10	65	6
	6	6	111	111	46	50	9	9	9	9	60	5
	5	6	102	103	44	47	8	7	9	9	50	5
	4	6	93	98	42	44	6	6	7	7	40	5
	4	5	90	93	41	42	6	6	7	7	35	5
	3	5	89	89	40	40	6	6	7	7	30	4
	2	4	87	85	38	40	5	5	6	7	25	4
	2	4	83	82	36	39	5	5	6	6	20	4
	1	2	77	71	34	33	3	3	4	3	10	3
	1	2	70	67	30	29	1	1	3	1	4	2
	0	0	67	63	19	27	1	1	1	1	1	1

MENTAL AGE 9

	(Cable Jump) Gross Body Coordination		(Beam Walk) Balance Postural Orientation		(Ball Bounce) Eye–Hand Coordination		(Throw) Eye–Hand Accuracy		(Kick) Eye–Foot Accuracy			
Number of Pupils Tested	118	92	97	91	99	90	113	90	108	92		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	140	140	63	62	15	14	15	13	99	9
	9	9	136	137	60	62	14	13	13	13	96	8
	9	8	133	130	58	58	13	12	12	12	90	8
	8	8	129	123	55	54	12	11	11	11	80	7
	8	7	124	119	55	53	12	11	11	11	75	6
	7	6	123	117	52	50	11	10	10	11	70	6
	6	6	122	114	50	50	11	9	10	10	65	6
	6	6	118	113	50	49	10	9	9	10	60	5
	5	5	113	105	47	45	9	8	9	9	50	5
	5	4	107	100	45	43	8	7	7	9	40	5
	4	4	103	97	43	42	7	6	7	8	35	5
	4	4	102	95	43	40	6	6	6	7	30	4
	3	3	97	89	40	39	6	6	6	7	25	4
	3	3	93	85	38	37	5	5	6	7	20	4
	1	2	81	73	35	34	3	3	4	5	10	3
	0	0	75	63	32	30	2	2	2	4	4	2
	0	0	66	52	30	28	1	1	1	1	1	1

MENTAL AGE 10

Number of Pupils Tested	117	89	104	94	106	90	109	90	113	90		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	10	10	144	135	64	65	16	14	15	15	99	9
	9	9	144	133	63	64	15	13	15	14	96	8
	8	8	134	128	62	60	14	13	13	12	90	8
	7	8	127	123	59	55	13	11	12	12	80	7
	7	8	127	123	56	54	13	11	11	11	75	6
	7	7	123	120	55	52	13	11	11	11	70	6
	6	6	122	115	52	51	12	10	10	11	65	6
	6	6	121	115	50	50	12	9	10	11	60	5
	6	6	117	107	48	48	11	9	9	10	50	5
	5	5	113	103	45	45	9	8	8	9	40	5
	4	4	107	100	45	44	8	7	8	9	35	5
	4	4	103	97	43	42	7	7	7	8	30	4
	3	4	93	85	40	38	6	6	7	7	20	4
	2	2	83	75	36	34	4	4	4	6	10	3
	2	2	77	72	32	30	3	2	5	3	4	2
	0	1	66	64	28	29	1	1	3	3	1	1

MENTAL AGE 11

	(Cable Jump) Gross Body Coordination		(Beam Walk) Balance Postural Orientation		(Ball Bounce) Eye–Hand Coordination		(Throw) Eye–Hand Accuracy		(Kick) Eye–Foot Accuracy			
Number of Pupils Tested	139	96	121	90	123	75	144	84	126	54		
	RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES		RAW SCORES			
	M	F	M	F	M	F	M	F	M	F	PERCENTILE	STANINE
	9	10	140	141	64	60	17	14	15	15	99	9
	8	8	136	137	62	59	15	13	14	15	96	8
	8	8	133	133	59	55	14	12	13	14	90	8
	7	8	127	129	55	50	12	11	12	13	80	7
	7	7	123	127	53	50	12	11	11	13	75	6
	6	7	120	122	52	49	12	10	11	13	70	6
	6	6	117	119	50	47	11	9	11	10	65	6
	5	6	115	115	50	46	11	9	10	10	60	5
	5	6	108	108	48	45	10	9	9	9	50	5
	4	4	105	103	45	41	9	7	9	9	40	5
	4	4	100	100	44	40	9	7	8	9	35	5
	3	4	97	96	41	39	8	7	8	8	30	4
	3	4	92	91	41	37	8	6	7	8	25	4
	2	4	87	83	40	35	7	6	7	7	20	4
	2	2	77	75	35	34	5	3	6	5	10	3
	1	1	69	68	33	30	2	3	3	3	4	2
	0	1	60	52	30	28	1	1	1	3	1	1

PHYSICAL FITNESS NORMS: EMOTIONALLY DISTURBED

Emotionally Disturbed

New Jersey.

Instrument: Physical Fitness Level II

Mental Ages: 6-11

Data Gathered By: ACTIVE Office

MENTAL AGE 6

	RAW SCORES				RAW SCORES					
	ARM HAND		SIT-UPS		BROAD JUMP		200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	61		61		44		31			
	M	F	M	F	M	F	M	F		
	32		110		60		34		99	9
	30		59		60		37		96	8
	25		50		55		38		90	8
	19		28		52		40		80	7
	18		25		50		40		75	6
	15		23		50		42		70	6
	15		23		50		42		65	6
	12		20		46		42		60	5
	9		11		40		48		50	5
	5		10		35		60		40	5
	3		10		34		62		35	5
	2		8		33		62		30	4
	1		5		29		63		25	4
	1		4		22		64		20	4
	1		2		14		79		10	3
	0		1		13		80		4	2
	0		0		4		81		1	1

Note: Where scores not recorded, data insufficient.

MENTAL AGE 7

	RAW SCORES				RAW SCORES					
	ARM HANG		SIT-UPS		BROAD JUMP		200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	90		52		49		34			
	M	F	M	F	M	F	M	F		
	46		66		66		32		99	9
	32		65		60		35		96	8
	22		47		60		40		90	8
	16		36		55		42		80	7
	15		34		54		43		75	6
	12		30		51		44		70	6
	12		30		49		44		65	6
	10		28		48		48		60	5
	6		26		47		50		50	5
	5		23		41		62		40	5
	5		22		40		63		35	5
	3		19		39		69		30	4
	2		12		37		69		25	4
	2		12		37		69		20	4
	1		8		12		71		10	3
	0		5		5		74		4	2
	0		5		3		77		1	1

Note: Where scores not recorded, data insufficient.

MENTAL AGE 8

	RAW SCORES				RAW SCORES					
	ARM HANG		SIT-UPS		BROAD JUMP		200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	66		90		64		50			
	M	F	M	F	M	F	M	F		
	34		125		72		34		99	9
	30		69		60		37		96	8
	26		50		60		37		90	8
	22		44		54		40		80	7
	18		41		53		40		75	6
	13		40		53		42		70	6
	9		37		52		42		65	6
	9		33		50		43		60	5
	7		28		47		43		50	5
	6		26		44		46		40	5
	5		24		42		48		35	5
	5		20		42		48		30	4
	5		20		39		54		25	4
	3		16		36		59		20	4
	2		8		29		60		10	3
	1		5		5		62		4	2
	1		2		3		62		1	1

Note: Where scores not recorded, data insufficient.

MENTAL AGE 9

	RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	54		60		57					
	M	F	M	F	M	F	M	F		
	60		90		78				99	9
	53		90		77				96	8
	25		69		70				90	8
	17		46		60				80	7
	16		45		58				75	6
	10		42		58				70	6
	9		34		54				65	6
	6		30		54				60	5
	4		20		51				50	5
	3		20		48				40	5
	2		19		48				35	5
	2		16		46				30	4
	1		15		45				25	4
	1		14		43				20	4
	1		8		38				10	3
	0		4		5				4	2
	0		2		5				1	1

Note: Where scores not recorded, data insufficient.

MENTAL AGE 10

	RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	86		91		86					
	M	F	M	F	M	F	M	F		
	41		85		75				99	9
	40		69		72				96	8
	25		60		65				90	8
	19		45		62				80	7
	16		39		57				75	6
	15		36		56				70	6
	14		30		55				65	6
	10		30		53				60	5
	8		26		49				50	5
	5		18		45				40	5
	4		15		37				35	5
	4		12		37				30	4
	3		8		9				25	4
	3		5		7				20	4
	1		4		5				10	3
	1		3		4				4	2
	0		2		4				1	1

Note: Where scores not recorded, data insufficient.

MENTAL AGE 11

	RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested	88		92		62					
	M	F	M	F	M	F	M	F		
	50		100		101				99	9
	41		89		78				96	8
	32		64		78				90	8
	28		59		73				80	7
	24		50		70				75	6
	19		46		68				70	6
	17		45		66				65	6
	14		40		63				60	5
	13		36		60				50	5
	8		31		58				40	5
	7		25		58				35	5
	5		20		54				30	4
	4		15		50				25	4
	4		5		48				20	4
	2		4		5				10	3
	1		2		4				4	2
	0		0		3				1	1

Note: Where scores not recorded, data insufficient.

SUMMARY REMARKS

This chapter has provided motor ability and physical fitness norms based on mental ages for mentally retarded, learning disabled and emotionally disturbed students. The norms are offered as a service to the many schools, districts, and agencies who have adopted ACTIVE's motor and/or physical fitness components, and they provide teachers of the handicapped with an alternate, and possibly more valid basis for diagnosing, assessing, prescribing, and evaluating the performance of their students.

Limitations

The limitations cited in Chapter V should be reviewed because they are also applicable to norms based on mental ages Additional cautions:

1. All norms are based on student populations from the State of New Jersey and, consequently, may not be appropriate for use in other states.
2. The limited raw data gathered necessitated the establishment of norms based on different mental age instruments.
3. In some instances mental ages were determined in terms of I.Q.'s and chronological ages (i.e., use of the Formula: $MA=\frac{IQ}{CA}$)
4. No one variable is a valid predictor of motor ability or physical fitness.

Recommendations

Despite the limitations mentioned, it is hoped that the MR, LD, and ED mental age norms will stimulate other educators to develop more realistic standards for assessing and evaluating the performance of handicapped individuals.

It is recommended that the mental age–chronological age interrelationship be investigated further, with possible inclusion of the following:

1. The present study should be replicated and expanded. Data banks should be expanded and norms for other states and the United States should be developed.
2. Data should be "normed" on the basis of specific, discrete mental age instruments.
3. Studies should be conducted to investigate the appropriateness of developing all norms on the basis of mental age.
4. Researchers should thoroughly investigate the area of tests and measurement and their relation to the handicapped. Viable, practical test batteries are needed to assess the performance of the multi-handicapped individual. Questions must be addressed, such as, "What criteria are the best predictors of motor performance or physical proficiency?" Chronological age is totally inappropriate. Mental age, though an improvement, does not include other important variables such as motivation level, body structure and environmental factors.

CHAPTER VII

DEVELOPMENT OF LOCAL NORMS

RATIONALE

Many teachers are unwilling to tackle the task of establishing local norms because:

1. They do not possess the necessary statistical background.
2. They possess the mathematical background, but have forgotten the procedures for converting raw scores to percentiles and standard scores.
3. The task is too time-consuming.

Consequently, most teachers determine a pupil's improvement or rank in class by comparing his performance scores with standards established by the publisher of a test or test battery. This technique is inappropriate because it violates a basic assumption underlying the use of percentiles: the norms are only valid for those students who were part of the target population used to establish the standards.

The ACTIVE Training Program stresses the importance of establishing local norms. One of the course competencies involves the computation of percentiles, stanine scores (a normalized standard score of nine intervals) and an index score (one score reflective of student performance on a total test battery). Most teachers taking the course achieve the skills required because the procedure is simple, does not require any knowledge of, or ability to apply, statistical techniques, and, most important, involves a minimum amount of time. The following section provides the step-by-step procedure taught in the ACTIVE course. A careful review of the procedure and immediate application of the process should enable the reader to establish norms for any data.

PROCEDURE

Administer the Test or Test Battery

The test could involve one set of scores such as a spelling, typing or addition test, or a series of sub-test scores, such as the scores determined by the ACTIVE Motor Ability instruments which measure gross body coordination (GBC), balance-postural orientation (BPO), eye-hand coordination (EHC), eye-hand accuracy (EHA), and eye-foot accuracy (EFA). It is important that one pre-determine the factors measured by the test (i.e., the number of subtests) because that information provides the basis for recording scores.

Prepare Form(s) and Record Test Score(s)

To establish norms for a test involving one set of data, the form should include the following:

Spelling Test

	RAW SCORES							
Name	**Pre**	**Post**	**Grade**	**Age**	**Sex**	**IQ**	**MA**	**Handicapping Condition**
No. 1	9	13	3	8	M			None
No. 2	7	18	3	8	M			None
No. 3	14	19	3	9	M	80	7.2	Neurologically Impaired
No. 4	13	20	3	7	F			None
No. 5	12	17	3	8	M			None

A battery involving several test items should include the raw scores for all factors. The example below indicates data from the administration of one of the ACTIVE instruments.

Motor Ability Instrument: Level II

Name	GBC Pre	GBC Post	BPO Pre	BPO Post	EHC Pre	EHC Post	EHA Pre	EHA Post	EFA Pre	EFA Post	Grade	Age	Sex	IQ	MA	Handicapping Condition
No. 1	6		2		8		12		9		K	5	M	70	4.0	Educable Mentally Retarded
No. 2	9		6		2		11		8		K	5	F	65	3.8	EMR
No. 3	7		6		6		10		9		K	5	M	60	3.2	EMR
No. 4	8		9		9		13		7		K	5	F	68	4.0	EMR
No. 5	10		1		8		10		4		K	6	M	95	5.8	Perceptually Impaired

Note: Record only "IQ" and "MA" scores for the following handicapping conditions: Mental retardation, neurological impairment, perceptual impairment and emotional disturbance.

Transfer Test Scores to Tally Sheets[1]

The previous forms provide the means for recording raw scores, however the data is ungrouped (i.e., not organized to provide meaningful information). The conversion of the performance scores to percentiles requires that the information be converted to grouped data. (Appendix E provides a "Tally Sheet" which can be reproduced and used to convert ungrouped data to grouped data). The process involves the following steps:

1. Reproduce sufficient tally forms for one's needs. For the spelling test, three separate forms are needed: male, 8 years, normal; female, 7 years, normal; and male, 7 years, mental age.

Note: The procedure of grouping by age is recommended because it provides the basis for developing more valid norm tables. However, if desired, the data could be tallied solely on the basis of grade level.

2. Plot raw scores for the test administered on the tally sheet. (See example.)
3. Accumulate the raw scores from the "poorest" score to the "best" score. (See example.) Note that there is "1" tally in the raw score interval of "60;" thus a "1" was recorded to the right of the interval. The raw score of "62" has "2" tallies, thus we accumulate by adding "1" plus "2" giving us the score of "3," etc. Be sure to check to ensure that your final accumulated score is equal to the total number of subjects taking the test, (in the example 45=45).

Compute Percentile Scores

To determine any percentile proceed as follows:

1. Identify the "N Table" that includes the number of subjects that took the test. In the example we used 45 subjects, thus we would refer to Tables 40-49, as indicated below.[2]

The procedure recommended provides the capability of establishing local norms for N's exceeding 199.

2. State the percentile you are looking for, e.g., 50%.
3. Follow the N-45 column down to the point where it intersects with the P50 indicator (on the left). In our example with 45 subjects, the intersection point reveals a score of "23," which means that 50% of 45 scores is "23."
4. Locate the score identified (23) in the Table along the **accumulated score distribution** on the tally sheet. (Note: On the sample tally sheet, there is no accumulated score of "23"; instead we find scores of "22" and "29." The rule to remember is you always select the higher interval. Had the accumulated score we were seeking been "22.1" we would still have selected the interval that had an accumulated score of 29.)
5. Identify the raw score to the left of accumulated score you have just located; in the example, the raw score is "69." The number "69" is the raw score a student would have to achieve to attain the 50%.
6. Utilizing the same procedure, let us determine the raw score for the 25th%. The Tables of Numbers indicate that 25% of 45=11. An accumulated score of 11 indicates that the raw score for the 25th% is "66." Using the same procedure, determine the raw scores necessary for each percentile interval listed in the left hand column.

Convert Data to Normalized Standard Scores

To convert percentiles to stanines proceed as follows:

1. Determine percentile rank scores for your test battery.
2. Determine each subject's percentile scores for each item of the test battery.

[1] Material is paraphrased from Thomas M. Vodola, *Descriptive Statistics Made Easy for the Classroom Teacher,* 1974.

[2] Table excerpted from *Descriptive Statistics Made Easy for the Classroom Teacher,* Thomas M. Vodola, pp. 24-32. The manual includes tables for N's ranging from 30-199.

TABLE 7–1

RAW SCORE TALLY SHEET: A SAMPLE

N=45

Event Spelling Season _____ Age 7 Sex F School _____

Directions: Tally all raw scores as follows – ~~𝍸~~

%iles	100–	75– /	45 50–	25–
99_____	99–	74– /	44 49–	24–
96_____	98–	73– //	43 48–	23–
90_____	97–	72– ///	41 47–	22–
80_____	96–	71– ////	38 46–	21–
75_____	95–	70– ~~𝍸~~	34 45–	20–
70_____	94–	69– ~~𝍸~~ //	29 44–	19–
65_____	93–	68– ~~𝍸~~	22 43–	18–
60_____	92–	67– ////	17 42–	17–
50. 69	91–	66– ////	13 41–	16–
40_____	90–	65–	40–	15–
35_____	89–	64– ///	9 39–	14–
30_____	88–	63– ///	6 38–	13–
25 66	87–	62– //	3 37–	12–
20_____	86–	61–	36–	11–
10_____	85–	60– /	/ 35–	10–
4_____	84–	59–	34–	9–
1_____	83–	58–	33–	8–
	82–	57–	32–	7–
	81–	56–	31–	6–
	80–	55–	30–	5–
	79–	54–	29–	4–
	78–	53–	28–	3–
	77–	52–	27–	2–
	76–	51–	26–	1–
				0–

TABLE 7-2

DETERMINING THE PERCENTAGE OF CASES SOUGHT

TABLES 40 to 49

N=	40	41	42	43	44	45	46	47	48	49	=N
p99	40	41	42	43	44	45	46	47	48	49	p99
96	38	39	40	41	42	43	44	45	46	47	96
90	36	37	38	39	40	41	41	42	43	44	90
80	32	33	34	34	35	36	37	38	38	39	80
75	30	31	32	32	33	34	35	35	36	37	75
70	28	29	29	30	31	32	32	33	34	34	70
65	26	27	27	28	29	29	30	31	31	32	65
60	24	25	25	26	26	27	28	28	29	29	60
50	20	21	21	22	22	23	23	24	24	25	50
40	16	16	17	17	18	18	18	19	19	20	40
35	14	14	15	15	15	16	16	16	17	17	35
30	12	12	13	13	13	14	14	14	14	15	30
25	10	10	11	11	11	11	12	12	12	12	25
20	8	8	8	9	9	9	9	9	10	10	20
10	4	4	4	4	4	5	5	5	5	5	10
4	2	2	2	2	2	2	2	2	2	2	4
p 1	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	p 1

3. Convert each subject's percentile scores to stanine scores by referring to the conversion chart.

Conversion Chart[1]

Percentile Intervals	Stanine Scores
97-above	9
90-96	8
80-89	7
65-79	6
35-64	5
20-34	4
10-19	3
4-9	2
3-below	1

4. Add the stanine scores together for the subject's composite score for the test battery. An example will clarify the procedure:

Test: Mathematics
Name: John Doe

Factor	Percentile	Stanine
Decimals	90	8
Fractions	30	4
Mixed Numbers	75	6
Problem-Solving	4	2
		20

[1] Edwin A Fleishman, *The Structure and Measurement of Physical Fitness,* 1964, p. 141.

Note: To make the test battery score more meaningful to parents, add a zero (0) to the total stanine and divide by the number of test factors. Thus, in the example above, $\frac{200}{4} = 50$. By converting to stanines, we can say that John's ability to compute decimals is four times superior to his ability to solve mathematics problems. We can also make comparisons between individuals on the same test. Finally, the test battery score of 50 provides us with baseline information relative to the student's performance in mathematics.

SUMMARY REMARKS

Percentile norms provide the teacher with the capability of: determining pupil rank, relative strengths and weaknesses, identifying group strengths and deficiencies, planning curriculum modifications, and conveying this information to parents and the community.

The writer maintains that each teacher should use normative data as one basis for diagnosing, appraising, prescribing, and evaluating pupil performance. While many teachers presently use norms, they all too frequently, compare their students' performance to norms standards that are not appropriate for their population.

The information in this chapter has been included to rectify that problem by presenting a sequential procedure that permits one to establish valid norms without the need for sophisticated statistical equipment or skills. It is anticipated that the use of this procedure will motivate the teacher to establish his or her local norms.

APPENDICES

APPENDIX A–1

MOTOR ABILITY COMPOSITE SCORE SHEET: LEVEL I

School:_____ City/State:_____ Teacher:_____ Date:_____

SUBJECT NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
SOMATOTYPE																
SEX																
M.A.																
I.Q.																
AGE																
HANDICAP																
TEST ITEM																
1. Walk																
2. Creep																
3. Climb Stairs																
4. Skip																
5. March-in-Place																
STANINE, GBC																
1. Stand–Both Feet																
2. Stand–Right Foot																
3. Stand–Left Foot																
4. Jump–Feet Staggered																
5. Jump–Feet Parallel																
6. Jump–Stationary																
7. Hop–Right Foot																
8. Hop–Left Foot																
STANINE, B/PO																
1. Catch																
2. Ball–Bounce																
3. Touch Ball–Lateral																
4. Touch Ball–Fore/Aft																
5. Bat Ball–Hand																
6. Bat Ball–Bat																
STANINE, EHC																
1. Throw–Right																
2. Throw–Left																
3. Kick–Right																
4. Kick–Left																
STANINE EHA/EFA																
TOTAL STANINE																
MOTOR ABILITY INDEX																

APPENDIX A–2

MOTOR ABILITY COMPOSITE SCORE SHEET: LEVEL III

School:_____ City/State:_____ Teacher:_____ Date:_____

SUBJECT NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
SOMATOTYPE																										
SEX																										
M.A.																										
I.Q.																										
AGE																										
HANDICAP																										
TEST ITEM																										
1. Cable Jump																										
STANINE, GBC																										
2. Walk, Beam																										
STANINE, BPO																										
3. Ball-Bouncing																										
STANINE, EHC																										
4. Throw, Target																										
STANINE, EHA																										
5. Kick, Target																										
STANINE, EFA																										
TOTAL STANINE																										
MOTOR ABILITY INDEX																										

APPENDIX B
DIRECTIONS FOR PREPARING TIME PRESCRIPTION FORM

Title IVC, ESEA
Project No. 72-341

1. Type, or print legibly.
2. List complete mailing address (including zip code).
3. Program Time (In Minutes): Insert the time for that portion of the period that you desire to individualize instruction. (Note: It is suggested you devote a portion of each period to group/social activities.)
4. Symbols: GBC, Gross Body Coordination; B/PO, Balance/Postural Orientation; E/HC, Eye/Hand Coordination; E/HA, Eye/Hand Accuracy; and E/FA, Eye/Foot Accuracy.
5. Stanines: Record the stanine score for each factor; scores should range from 1 to 9.[1]
6. Time: **To be filled in by the Project ACTIVE staff.**
7. Age, Sex, I.Q., M.A.: Information desired by the Project Director so that state-wide norms can be established.
8. Handicapping Condition: List classified students as EMR, TMR, NI, PI, ED, etc. List non-classified students as LMA (Low Motor Ability), LPV (Low Physical Vitality), or Normal.
9. Subject No.: Spaces have been provided for the submission of stanine scores for 12 subjects. If you have data for more than 12 subjects, reproduce the original sheet and **change the subject numbers accordingly.** (Note: Be sure to record scores on the appropriate form (i.e., motor performance scores on the Motor Ability Form and physical fitness scores on the Physical Fitness Form.)
10. Mail form(s) to: Dr. Thomas M. Vodola, Township of Ocean School District, Dow Avenue, Oakhurst, N.J. 07755 (Phone No.: 201-531-6600 Ext. 365).

RETURN PROCEDURE

1. The Project ACTIVE staff will: feed the data into the mini-computer; record the time prescriptions for each subject; include a packet of resource/tasks activities; and return to the instructor making the request.

PROCEDURE FOR USING RESOURCE TASKS/ ACTIVITIES MATERIALS

1. Review packet: You will note activities are grouped according to the five factors (i.e., GBC, B/PO, E/HC, E/HA, and E/FA), or the four physical fitness factors.
2. Prescribe tasks/activities: Identify a child's time prescription for one factor and select tasks from the appropriate section of the manual. For example, if subject No. 1 received a time prescription of 3:20 (three minutes and twenty seconds) for GBC, refer to the section that lists Gross Body Coordination Tasks/Activities and select items for that time duration. (Note: It is suggested that one minute per task be used as a guideline. However, it is only a guideline as the more complex tasks may require more time.) (References are to the Motor Ability Manual.)
3. Sequence of tasks within each section: Although an effort was made to sequence tasks from the simple to the complex, the instructor should make the final prescriptive decision and sequence the tasks according to the needs of each child.

[1] Raw scores are also requested so that the ACTIVE Office can expand its data banks.

APPENDIX B (Continued)

MOTOR ABILITY TIME PRESCRIPTION FORM*: LEVEL _____

(Insert Level I, II, or III)

Instructor: _____ School: _____ Phone: _____

Address: _____ Zip Code: _____

Program Time: (In minutes) _____ Date: _____

Subject No.	G.B.C. Stanine	G.B.C. Time	B./P.O. Stanine	B./P.O. Time	E./H.C. Stanine	E./H.C. Time	E./H.A. Stanine	E./H.A. Time	Age	Sex	I.Q.	M.A.	Handicapping Condition
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													

*Please record data as per the illustration

Raw Score → ⊘ ← Stanine Score

APPENDIX B (Continued)

PHYSICAL FITNESS TIME PRESCRIPTION FORM*

Instructor: _____ School: _____ Phone: _____

Address: _____ Zip Code: _____

Program Time: (In minutes) _____ Date: _____

	Arm Hang		Sit-Ups		Standing Br. Jump		Endurance		Age	Sex	I.Q.	M.A.	Handicapping Condition
	Stanine	Time	Stanine	Time	Stanine	Time	Stanine	Time					
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													

*Please record data as per the illustration

Raw Score → ☒ ← Stanine Score

APPENDIX C

DIAGNOSTIC-PRESCRIPTIVE (DP) GUIDELINES FOR PROGRAMMING MOTOR ACTIVITIES FOR HANDICAPPED CHILDREN

INTRODUCTION

The major thrust of Project ACTIVE (All Children Totally InVolved Exercising) is to provide teachers with those skills, knowledges, and attitudes necessary to provide a physical activity program commensurate with the individual needs of their students. Primary emphasis has been placed on the motor ability phase of the program. Thus far, trainees have been provided three motor instruments and pupil time prescriptions to aid their DP efforts. However, feedback indicates teachers need additional guidance and assistance.

The **Diagnostic-Prescriptive Guidelines** on the following pages have been prepared to provide the assistance requested. Additional information, at this time, will make the Guidelines more meaningful. Please note the following changes in motor instrument titles:

Old Title

1. Basic Motor Ability Screening Test
2. K-2 Motor Ability Instrument (Ages 5-7)
3. Motor Ability Instrument, Grades 3-6 (Ages 8-11)

New Title

1. Motor Ability Instrument: Level I
2. Motor Ability Instrument: Level II
3. Motor Ability Instrument: Level III

The purpose of the title modifications is to eliminate confusion as to the appropriateness of the instruments for use with different handicapping populations, grade levels and ages. The "levels" in the new titles refer to the degree of difficulty of the test items in the three batteries: Level I seems most appropriate for the severely or profoundly retarded; Level II for the moderately retarded; and Level III for the learning disabled or motorically gifted students.[1] (The recommendations are based on experimentation, but are not conclusive. The appropriateness of each instrument for testing purposes must be determined by the teacher.)

[1] It should be noted that the three instruments provide a viable means of assessing the motor proficiency of handicapped individuals, ages 3-20, thus complying with Public Law 94-142 (Education for All Handicapped Children Act).

DIRECTIONS FOR THE USE OF THE DIAGNOSTIC-PRESCRIPTIVE GUIDELINES

Administer the test battery deemed most appropriate and proceed as follows:

1. Convert raw scores to stanine scores.
2. Secure individual pupil time prescriptions from the ACTIVE Office (optional).
3. Match each child's stanine scores with the "Diagnostic Indicator" for each motor factor.
4. Review diagnostic information and prescriptive tasks.
5. Plan student's motor program. (Note: Pages 77-109 of the Low Motor Ability Manual include 153 tasks and activities that may be used for prescriptive purposes.) (The prescriptive guidelines and activities cited on the following pages and in the motor manual are only partial lists which are recommended for use as a guide. Activities or tasks not listed are not meant to be excluded.)

The D-P Guidelines are based on norm-referenced data and consequently do not provide the most valid diagnostic information. Therefore, it is recommended that the teacher observe the child carefully during test administration and record all atypical motor patterns. This information, coupled with guidelines suggestions, will increase the validity of each diagnosis and prescription.

A. GROSS BODY COORDINATION (GBC)

1. **Diagnostic Indicator**: Stanine of 1 or 2.
   Diagnosis: Performance requiring the coordination of gross body movements was below the expectancy level for this age.
   Prescription: Movement involving the coordinated use of arms and legs such as, crawling, creeping, and climbing.
   Locomotor tasks such as, walking, marching to a rhythm, jumping, leaping, gallopinn and skipping.
   Alternate Diagnosis: GBC test item may be too difficult. Substitute with a test item that is consistent with the ability level.
   Alternate Prescription: Use test item indicators as prescription guidelines.
2. **Diagnostic Indicator**: Stanines 3-7.
   Diagnosis: GBC performance ranges slightly below to slightly above the expectancy level for this age.
   Prescription: A sequenced variety of tasks and activities as cited for stanine performance scores of 1 or 2.

3. **Diagnostic Indicator:** Stanine of 8 or 9.
   Diagnosis: GBC performance is at, or above, the expectancy level for this age group.
   Prescription: More complex GBC tasks such as rope skipping; side-straddle hops; Simon Says and other movement patterns involving the integrated use of arms and legs.
   Alternate Diagnosis: GBC test item may be too easy. Substitute with a test item which involves a greater degree of difficulty.
   Alternate Prescription: Tasks comparable to those cited for stanine performance scores of 8 or 9, plus the incorporation of perceptual and/or cognitive cues. Examples:
   1. Rope skipping to music—auditory and motor.
   2. Hopping on letter grid—motor and reading skills.
   3. Leaping and counting—motor and mathematics skills.

B. BALANCE-POSTURAL ORIENTATION (BPO)

1. **Diagnostic Indicator:** Stanine of 1 or 2.
   Diagnosis: Performance requiring the ability to sustain control of the body (when using both sides simultaneously, individually, or alternately) was below the expectancy level for this age.
   Prescription: BPO tasks which require good balance in the sitting, kneeling and standing positions. Advance to the performance of locomotor tasks on equipment above ground level and jumping from varied heights.
   Alternate Diagnosis: BPO test item may be too difficult. Substitute with a test item that is consistent with the ability level.
   Alternate Prescription: Use test item indicators as prescription guidelines.
2. **Diagnostic Indicator:** Stanines of 3-7.
   Diagnosis: BPO performance ranges slightly below to slightly above the expectancy level for this age.
   Prescription: A sequenced variety of tasks and activities as cited for stanine performance scores of 1 or 2.
3. **Diagnostic Indicator:** Stanine 8 or 9.
   Diagnosis: BPO performance is at, or above, the expectancy level for this age.
   Prescription: More complex BPO tasks such as balancing on one foot; head and/or hand balancing positiitions; and the integration of balancing objects while performing the aforementioned tasks.
   Alternate Diagnosis: BPO test item may be too easy. Substitute with a test item which requires a greater degree of difficulty.
   Alternate Prescription: Tasks comparable to those cited for stanine performance scores of 8 or 9, plus the incorporation of perceptual and/or cognitive cues. Examples:
   1. Marching to music—auditory and motor
   2. "Stepping stones"—visual and motor.

C. EYE-HAND COORDINATION (EHC)

1. **Diagnostic Indicator:** Stanine of 1 or 2.
   Diagnosis: Performance requiring the ability of the eyes to visually steer the hands through space to accomplish a given task was below the expectancy level for this age.
   Prescription: EHC tasks involving: touching and striking stationary objects; tapping slow moving objects (e.g., a balloon); or, catching and propelling a slow moving object.
   Alternate Diagnosis: EHC test item may be too difficult. Substitute with a test item that is consistent with the ability level.
   Alternate Prescription: Use test item indicators as prescription guidelines.
2. **Diagnostic Indicator:** Stanines of 3-7.
   Diagnosis: EHC performance ranges from slightly below to slightly above the expectancy level for this age.
   Prescription: Tasks as cited for stanine performance scores of 1 or 2. Decrease the size and increase the speed of the moving object.
3. **Diagnostic Indicator:** Stanine of 8 or 9.
   Diagnosis: EHC performance is at, or above, the expectancy level for this age.
   Prescription: More complex EHC tasks such as: juggling one or more objects; bouncing a ball, left, right, alternate hands; and, striking and catching smaller objects moving in different trajectory planes.
   Alternate Diagnosis: EHC test item may be too easy. Substitute with a test item which requires a greater degree of difficulty.
   Alternate Prescription: Tasks comparable to those cited for stanine performance scores of 8 or 9, plus the incorporation of perceptual and/or cognitive cues.

D. EYE-HAND ACCURACY (EHA)

1. **Diagnostic Indicator:** Stanine of 1 or 2.
   Diagnosis: Performance requiring the ability of the eyes to steer the hands in the propelling of an object to a specified area was below the expectancy level for this age.
   Prescription: EHA tasks involving: throwing objects at stationary targets; and batting stationary objects at stationary targets.
   Alternate Diagnosis: EHA test item may be too difficult. Substitute with a test item that is consistent with the ability level.
   Alternate Prescription: Use test item indicators as prescription guidelines.

2. **Diagnostic Indicator:** Stanines of 3-7.
   Diagnosis: EHA performance ranges from slightly below to slightly above the expectancy level for this age.
   Prescription: Tasks as cited for stanine performance scores of 1 or 2. Increase the difficulty level by progressing from experiences with stationary to slowly moving objects and targets.
3. **Diagnostic Indicator:** Stanine of 8 or 9.
   Diagnosis: EHA performance is at, or above, the expectancy level for this age.
   Prescription: Vary the speed and plane of the moving objects and targets. Reduce target and object size.
   Alternate Diagnosis: EHA test item may be too easy. Substitute with a test item which requires a greater degree of difficulty.
   Alternate Prescription: Tasks comparable to those cited for stanine performance scores of 8 or 9, plus the incorporation of perceptual and/or cognitive cues.

E. EYE-FOOT ACCURACY (EFA)

1. **Diagnostic Indicator:** Stanine of 1 or 2.
   Diagnosis: Performance requiring the ability of the eyes to steer either foot in the propelling of an object to a specified area was below the expectancy level for this age.
   Prescription: EFA tasks involving: kicking stationary objects at stationary targets
   Alternate Diagnosis: EFA test item may be too difficult. Substitute with a test item that is consistent with the ability level.
   Alternate Prescription: Use test item indicators as prescription guidelines.
2. **Diagnostic Indicator:** Stanines of 3-7.
   Diagnosis: EFA performance ranges from slightly below to slightly above the expectancy level for this age.
   Prescription: Tasks as cited for performance scores of 1 or 2. Increase the difficulty level by progressing from experiences with stationary to slowly moving objects and targets.
3. **Diagnostic Indicator:** Stanine of 8 or 9.
   Diagnosis: EFA performance is at, or above, the expectancy level for this age.
   Prescription: Vary the speed and plane of the moving objects and targets. Reduce target and object size.
   Alternate Diagnosis: EFA test item may be too easy. Substitute with a test item which requires a greater degree of difficulty.
   Alternate Prescription: Tasks comparable to those cited for stanine performance scores of 8 or 9, plus the incorporation of perceptual and/or cognitive cues.

IMPORTANT POINTS WORTHY OF REITERATION

1. The "Guidelines" are just that—guidelines and as such are provided to assist one in the implementation of the diagnostic-prescriptive process.
2. The DP process necessitates careful formative assessment of pupil performance (how the child performs the task). Consequently, each prescription should reflect activities or tasks based on observation and performance scores.
3. The child is sacred, not the instrument. Thus, in those situations where the test battery or a test item does not provide the discriminatory information desired, it should be replaced or modified.

APPENDIX D

PHYSICAL FITNESS COMPOSITE SCORE SHEET: LEVEL I

School:_____ City/State:_____ Teacher:_____ Date:_____

SUBJECT NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
SOMATOTYPE																									
SEX																									
M.A.																									
I.Q.																									
AGE																									
HANDICAP																									
TEST ITEM																									
1. Static Arm Hang																									
2. Modified Sit-ups																									
3. Standing Broad Jump																									
4. Running																									
TOTAL RAW SCORES																									

APPENDIX E

TALLY SHEET
FOR CONVERTING RAW SCORES TO PERCENTILES

N= _____ Year _____

Event _____ Pre Post (circle) Age _____ Sex _____ School _____

Directions: Tally all raw scores as follows: 𝍸

175–	150–	125–	100–	75–	50–	25–
174–	149–	124–	99–	74–	49–	24–
173–	148–	123–	98–	73–	48–	23–
172–	147–	122–	97–	72–	47–	22–
171–	146–	121–	96–	71–	46–	21–
170–	145–	120–	95–	70–	45–	20–
169–	144–	119–	94–	69–	44–	19–
168–	143–	118–	93–	68–	43–	18–
167–	142–	117–	92–	67–	42–	17–
166–	141–	116–	91–	66–	41–	16–
165–	140–	115–	90–	65–	40–	15–
164–	139–	114–	89–	64–	39–	14–
163–	138–	113–	88–	63–	38–	13–
162–	137–	112–	87–	62–	37–	12–
161–	136–	111–	86–	61–	36–	11–
160–	135–	110–	85–	60–	35–	10–
159–	134–	109–	84–	59–	34–	9–
158–	133–	108–	83–	58–	33–	8–
157–	132–	107–	82–	57–	32–	7–
156–	131–	106–	81–	56–	31–	6–
155–	130–	105–	80–	55–	30–	5–
154–	129–	104–	79–	54–	29–	4–
153–	128–	103–	78–	53–	28–	3–
152–	127–	102–	77–	52–	27–	2–
151–	126–	101–	76–	51–	26–	1–
						0–

PERCENTILES

99 _____	80 _____	65 _____	40 _____	25 _____	4 _____
96 _____	75 _____	60 _____	35 _____	20 _____	1 _____
90 _____	70 _____	50 _____	30 _____	10 _____	

BIBLIOGRAPHY

Amussen, Erling and K. Heaboll-Nelson. "Physical Performance and Growth in Children: Influence of Sex, Age and Intelligence." *Journal of Applied Physiology* 8:4: January 1956.

Beaber, James Duane. "The Performance of Educable Mentally Handicapped and Intellectualiy Normal Children on Selected Tasks Involving Simple Motor Performance." Doctoral dissertation. Syracuse, New York: Syracuse University, 1960.

Blair, Mary Jo. "Issue in Measurement: Norms" Graduate Paper Submitted, New York University, New York 1975.

Brace, David K. "Motor Learning of Feeble Minded Girls," Research Quarterly 19: December 1948.

Carrier, N.L. Malpass and K. Orton. "Response to Learning Tasks of Bright, Normal and Retarded Children." *Technical Bulletin 1961.* Washington, D.C.: US Office of Education Cooperative Research Program.

Doorn, Carol H. "Motor Proficiency of Mentally Retarded Children." Master's Thesis. Brookings, South Dakota: South Dakota State University, 1966.

Fait, H.F. *Special Physical Education: Adapted Corrective Developmental.* Philadelphia: W.B. Saunders Co., 1972.

Fleishman, Edwin A. *The Structure and Measurement of Physical Fitness,* Englewood Cliffs, New Jersey: Prentice-Hall, Inc. 1964.

Francis, R.J., and G.L. Rarick. "Motor Characteristics of the Mentally Retarded," Washington, D.C.: US Government Printing Office, Superintendent of Documents (US Office of Education Cooperative Research Project No. 152 (6432), 1960. Article, "Motor Characteristics of the Mentally Retarded," in *American Journal of Mental Deficiency* 63:5: 1959.

Hilsendager, Donald, Harold K. Jack and Lester Mann. *Basic Motor Fitness Test for Emotionally Disturbed and Mentally Handicapped Children:* Preliminary Report. National Institute of Mental Health, Grant 1 91-MH-8543. 1, 5. Philadelphia: Temple University, n.d.

Hollingsworth, Jack D. "A Comparison of Motor Ability of Mentally Retarded Children of Specific Mental and Chronological Ages and Normal Children." Doctoral dissertation. Athen, Georgia: University of Georgia, 1971.

Johnson, L. William. "Objective Test in Basketball for High School Boys." Unpublished Master's Thesis, State University of Iowa, 1934.

Landeree, Ben R., and Leon E. Johnson. "Motor Fitness of TMR and EMR and Normal Children." Medicine and Science in Sports, Vol. 6, No. 4, Department of Health and Physical Education, Columbia, Missouri: University of Missouri, 1974.

Office of Education, *A Practical Guide to Measuring Project Impact on Student Achievement.* Washington, D.C.: US Department of Health Education and Welfare, 1975.

Rarick, G. Lawrence, James H. Widdop and Geoffrey D. Broadhead. "The Motor Performance and Physical Fitness of Educable Mentally Retarded Children." Madison, Wisconsin: University of Wisconsin, 1967.

Stevenson, H.W. "Learning of Complex Problems by Normal and Retarded Subjects." *American Journal of Mental Deficiency,* 64: 1960.

Thurstone, Thelma G. "An Evaluation of Educating Mentally Handicapped Children in Special Classes and in Regular Classes." Chapel Hill, North Carolina: University of North Carolina. (US Office of Education Cooperative Research Program, Project No. 168, OE-SAE-6452), January 16, 1961.

Vodola, Thomas M. *Descriptive Statistics Made Easy for the Classroom Teacher.* Bloomfield, N.J.: The C.F. Wood Company, 1974.

Low Motor Ability: On Individualized Program for Enhancing Motor and Perceptive–Motor Performance. Oakhurst, N.J.: Township of Ocean School District and N.J. State Dept. of Education, 1976.

"Physical Fitness Test Battery." Township of Ocean School District, Oakhurst, N.J. 1974.

"The Effects of an Individualized-Personalized Physical Activity Program on the Motor/Physical Fitness Performance of Neurologically Impaired Children in the Jersey City School District." Jersey City Public Schools, Jersey City, N.J. 1976.

Widdop, James H. "The Motor Performance of Educable Mentally Retarded Children with Particular Reference to the Identification of Factors Associated with Individual Differences in Performance." Doctoral dissertation. Madison, Wisconsin: University of Wisconsin, 1967.

INDEX

A.C.T.I.V.E.
- adopters, iii
- clerical staff, iv
- d&a council, iii
- model kit, vi
- overview, i
- satellite sites, iii
- services, vii

Amussen, Erling, 34

Beaber, James Duane, 33
Bilowit, David S., v
Blair, Mary Jo, 33
Brace, David K., 33

Comparisons of Normal, MR, LD, ED
- motor: normal and ED, 56-57
- motor: normal and LD, 53-54
- motor: normal and MR, 50-51
- physical fitness: normal and ED, 58
- physical fitness: normal and LD, 55
- physical fitness: normal and MR, 52
- summary, 59-60

Definitions
- adapted P.E., vi
- developmental P.E., vi
- discriminatory power, i
- personalized instruction, i
- test components, i

Developmental Curves, 36-49
Development of Local Norms, 149-151
Diagnostic-prescriptive Guidelines, 158-160
Doorn, Carol H., 34

Emotionally Disturbed
- motor ability norms based on mental age, 139-145
- physical fitness norms based on mental age, 145-148

Fait, H.F., 22
Fleishman, Edwin A., 3
Forms
- motor ability, composite score sheets, 153-154
- motor ability, individual score sheets, 10-11, 18
- physical fitness, composite score sheet, 161
- physical fitness, individual score sheets, 23, 25
- raw data tally sheet, 162
- raw score tally sheet, sample, 151
- time prescription forms, 156-157

Francis, R.J., 33

Hilsendager, Donald, 3
Hollingsworth, Jack D., 34
Hope Public Schools, Hope, Arkansas, cover page

Iowa, Maquoketa Community Schools, 79

Johnson, L. William, 8

Learning Disabled
- motor ability norms based on mental age, 127-134
- physical fitness norms based on mental age, 135-138

Lincoln School, Bergenfield, N.J., 29
Londeree, Ben R., 34

Malpass, N.L., 34
Mentally Retarded
- motor ability norms based on mental age, 112-120
- physical fitness norms based on mental age, 121-126

Monmouth College, West Long Branch, N.J., 2, 126
Motor Ability Instruments
- instrument design, 3-4
- level I test, 13-20
- level II test, 4-9
- level III test, 9-13
- reliability and validity studies, 27-29
- testing guidelines, 30

Motor Performance, Chronological Age, Mental Age correlation matrix, 35

Norms: Based on Chronological Age (Motor)
- limitations, 110
- local, 62-69
- national, 75-79
- state, 69-76

Norms: Based on Chronological Age (Physical Fitness)
- limitations, 110
- local, 80-97
- national, 105-110
- state, 98-104

Norms: Based on Mental Age
- motor ability, ED, level II, 139-142
- motor ability, ED, level III, 142-145
- motor ability, LD, level II, 127-131
- motor ability, LD, level III, 132-134
- motor ability, MR, level II, 111-117
- motor ability, MR, level III, 117-120
- physical fitness, ED, level II, 145-148
- physical fitness, LD, level II, 135-138
- physical fitness, MR, level II, 121-126

Norms: Illinois, Quincy School District, 80-83
Norms: Minnesota, Slayton Public Schools, 83-88
Norms: Nebraska, Lexington Public Schools, 62
Norms: New Jersey, Asbury Park School District, 63
Norms: New Jersey, East Windsor, Perry Drew School, 63-64
Norms: New Jersey, Rutherford School District, 65-66, 94-97
Norms: New Jersey, Township of Ocean School District, 67-69, 88-94
Norms: National, 75-79, 105-110
Norms: State
    New Jersey, 69-74, 98-104
    Rhode Island, 74-75

Office of Education, 31

Physical Fitness Instruments
    description, 20
    intercorrelations with CA and MA, 35
    level I test, 22-26
    level II test, 20-22
    reliability and validity studies, 27-29
    testing guideline, 30

Rarick, G. Lawrence. 33
Reliability and Validity Studies, 27-29
Research Studies
    a review of the literature, 33-34
    data recording form, 31

Sharpe Health Elementary School, Washington, D.C., cover page
Stevenson, H.W., 33

Tally Sheet Sample, 151
Texas Woman's University, Denton, Texas, cover page
Thurstone, Thelma G., 33
Township of Ocean School District, Oakhurst, N.J., cover page

Vodola, Thomas M., 3, 34, 150

Widdop, James H., 34